United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with the United States Department of Interior, Bureau of Land Management, United States Department of Agriculture, Forest Service, and University of Wyoming Agricultural Experiment Station.

Soil Survey of Campbell County, Wyoming, Northern Part

How To Use This Soil Survey

General Soil Map

The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** or use the bookmarks for a general description of the soils in your area.

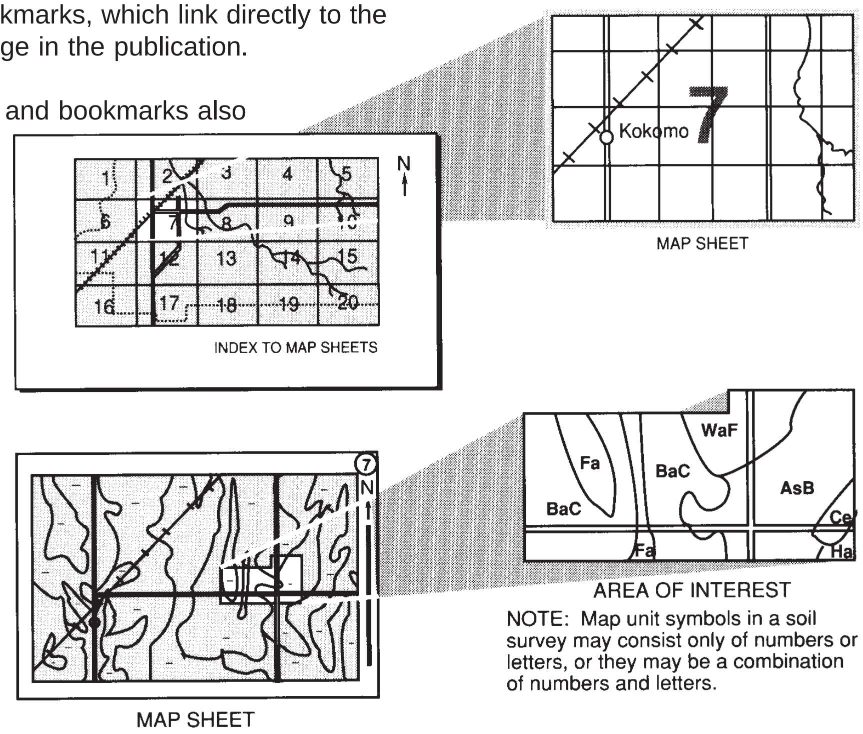
Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and click on that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols in that area. Go to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described. The map unit symbols and names also appear as bookmarks, which link directly to the appropriate page in the publication.

The **Contents** and bookmarks also show which table has data on a specific land use for each soil map unit. See the **Contents** for sections of this publication that may address specific needs.



NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 2002. Soil names and descriptions were approved in 2003. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2002. This survey was made cooperatively by the Natural Resources Conservation Service and the United States Department of Interior, Bureau of Land Management, the United States Department of Agriculture, Forest Service, and the Wyoming Agricultural Experiment Station. The survey is part of the technical assistance furnished to the Campbell County Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. Maps may not show the small areas of contrasting soils that could have been shown at a larger scale.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.

Cover: Typical area of general soil map unit 46, Cabbart-Kirby-Yawdim, in the background and general soil map unit 396 Deekay-Jaywest-Oldwolf in the foreground. The Cabbart-Kirby-Yawdim unit formed in scoria that was resistant to weathering and erosion. The Deekay-Jaywest-Oldwolf unit formed in alluvium from adjacent uplands.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

Contents

Cover i
How To Use This Soil Survey iii
Contents v
Summary of Tables xii
Foreword xiii
Where To Get Updated Information xiv
General Nature of the Survey Area 1
  Physiography, Relief, and Drainage 2
  Geology 2
  Natural Resources 3
  Climate 4
How This Survey Was Made 4
General Soil Map Units 7
  SOILS ON THE UPLANDS 7
    2—Lismas-Winler-Swanboy 7
    42—Fairburn-Oldwolf-Xema 8
    43—Delpoint-Yamacall-Cabbart 8
    45—Ucross-Fairburn-Jaywest 9
    46—Cabbart-Kirby-Yawdim 9
    49—Shingle-Theedle-Bidman 10
    51—Bidman-Ulm-Wyarno 11
    53—Cushman-Forkwood-Shingle 11
    113—Shingle-Samday-Badland 12
    126—Arwite-Vonalf-Moorhead 12
    384—Cambria-Theedle-Kishona 13
    385—Ucross-Deekay-Fairburn 14
    386—Deekay-Moorhead-Oldwolf 14
    387—Theedle-Shingle-Samday 15
    396—Deekay-Jaywest-Oldwolf 16
    398—Ironbutte-Jaywest-Rockybutte 16
    399—Lismas-Sabatka-Ironbutte 17
  SOILS IN VALLEYS 18
    44—Rockypoint-Sodawells-Pathfinder 18
    48—Haverdad-Kishona-Draknab 18
    397—Rockypoint-Iwait-Sodawells 19
Detailed Soil Map Units 21
  103—Arwite fine sandy loam, 0 to 6 percent slopes 22
  105—Arwite-Elwop fine sandy loams, 0 to 6 percent slopes 23
  106—Arwite-Elwop fine sandy loams, 6 to 15 percent slopes 25
  107—Arwite-Vonalf fine sandy loams, 0 to 6 percent slopes 28
  122—Cushman-Cambria loams, 6 to 15 percent slopes 30
  131—Deekay loam, 0 to 6 percent slopes 32
  132—Deekay-Moorhead loams, 0 to 6 percent slopes 33
  133—Deekay-Moorhead loams, 6 to 15 percent slopes 35
  134—Deekay-Oldwolf loams, 0 to 6 percent slopes 37

135—Deekay-Oldwolf loams, 6 to 15 percent slopes 39
136—Deekay-Ziggy loams, 0 to 6 percent slopes 41
137—Echeta clay loam, 0 to 6 percent slopes 43
138—Echeta-Cromack clay loams, 6 to 15 percent slopes 44
144—Forkwood loam, 0 to 6 percent slopes 46
146—Forkwood-Cushman loams, 0 to 6 percent slopes 47
147—Forkwood-Cushman loams, 6 to 15 percent slopes 49
148—Forkwood-Ulm loams, 0 to 6 percent slopes 51
149—Forkwood-Ulm loams, 6 to 15 percent slopes 53
151—Haverdad loam, 0 to 3 percent slopes 55
155—Heldt-Bidman complex, saline, 0 to 3 percent slopes 56
162—Lismas-Mittenbutte, cool-Sabatka complex, 6 to 40 percent slopes 58
164—Lismas-Sabatka-Badland complex, 3 to 45 percent slopes 61
166—Jaywest loam, 0 to 6 percent slopes 63
167—Jaywest-Moorhead loams, 0 to 6 percent slopes 65
168—Jaywest-Spottedhorse loams, 0 to 6 percent slopes 67
170—Keeline-Tullock loamy sands, 6 to 30 percent slopes 69
174—Brislawn-Rockybutte-Ironbutte complex, 0 to 10 percent slopes 71
176—Leiter-Cromack clay loams, 3 to 15 percent slopes 74
181—Moorhead clay loam, 0 to 6 percent slopes 76
182—Moorhead loam, 0 to 6 percent slopes 77
183—Moorhead-Leiter clay loams, 0 to 6 percent slopes 78
184—Moorhead-Leiter clay loams, 6 to 15 percent slopes 80
185—Moskee fine sandy loam, 0 to 6 percent slopes 82
187—Nuncho loam, 0 to 6 percent slopes 84
191—Pits-Dumps complex 85
192—Platmak loam, 0 to 6 percent slopes 86
198—Recluse loam, 0 to 6 percent slopes 88
203—Rockypoint-Iwait association, 0 to 6 percent slopes 89
204—Samday-Samday,cool-Shingle clay loams, 6 to 40 percent slopes 91
206—Samday-Shingle-Badland complex, 10 to 45 percent slopes 94
207—Cromack-Fairburn-Ucross complex, 3 to 20 percent slopes 96
210—Shingle-Taluce complex, 3 to 30 percent slopes 99
215—Theedle-Kishona loams, 6 to 20 percent slopes 101
216—Theedle-Kishona-Shingle loams, 3 to 30 percent slopes 103
217—Theedle-Shingle loams, 3 to 30 percent slopes 105
219—Torriarents-Torriorthents complex, reclaimed 107
220—Pitchdraw-Ashollow-Niobrara complex, 3 to 30 percent slopes 109
221—Turnercrest-Keeline-Taluce fine sandy loams, 6 to 30 percent slopes 111
223—Ucross loam, 1 to 9 percent slopes 114
224—Ucross-Iwait loams, 0 to 6 percent slopes 115
225—Ucross-Iwait-Fairburn loams, 3 to 30 percent slopes 117
228—Ulm-Renohill clay loams, 0 to 6 percent slopes 120
229—Ulm-Renohill clay loams, 6 to 15 percent slopes 122
233—Ustic Torriorthents, gullied 124
234—Ustic Torriorthents-Badland complex, 10 to 100 percent slopes 125
236—Vonalee-Terro fine sandy loams, 2 to 10 percent slopes 127
238—Vonalf-Xema fine sandy loams, 3 to 10 percent slopes 129
239—Ironbutte-Fairburn-Mittenbutte complex, 6 to 40 percent slopes 131
241—Ironbutte-Ironbutte, thin solum channery loams, 6 to 40 percent slopes 134
244—Muleherder-Ironbutte channery loams, 3 to 40 percent slopes 136

248—Ziggy-Iwait loams, 0 to 6 percent slopes ... 138
249—Ziggy-Iwait loams, 6 to 15 percent slopes ... 140
250—Ziggy-Ucross-Oldwolf loams, 3 to 15 percent slopes ... 142
251—Water ... 144
252—Absted-Slickspots complex, 0 to 6 percent slopes ... 145
253—Absted-Arvada-Slickspots complex, 0 to 6 percent slopes ... 147
254—Badland-Lismas complex, 15 to 75 percent slopes ... 149
255—Bidman-Parmleed loams, 0 to 6 percent slopes ... 151
256—Bidman-Ulm complex, 0 to 6 percent slopes ... 153
257—Bonfri, deep-Bonfri fine sandy loams, 0 to 6 percent slopes ... 154
258—Bonfri-Kirby complex, 0 to 10 percent slopes ... 156
259—Bonfri-Twilight-Blacksheep fine sandy loams, wooded, 3 to 30 percent slopes ... 158
260—Cabbart-Volborg-Badland complex, wooded, 3 to 60 percent slopes ... 161
261—Cabbart-Yawdim-Badland complex, 6 to 45 percent slopes ... 163
262—Cambria-Kishona-Zigweid loams, 0 to 6 percent slopes ... 166
263—Cedar Butte-Slickspots complex, 0 to 6 percent slopes ... 168
264—Clarkelen-Draknab fine sandy loams, 0 to 3 percent slopes ... 170
265—Clarkelen-Draknab-Boruff complex, 0 to 6 percent slopes ... 171
266—Coaliams fine sandy loam, moderately saline, 0 to 3 percent slopes ... 174
267—Cromack-Samsil clay loams, 3 to 15 percent slopes ... 175
268—Decolney-Hiland fine sandy loams, 0 to 6 percent slopes ... 177
269—Decolney-Hiland fine sandy loams, 6 to 15 percent slopes ... 179
270—Deekay-Deekay, stratified substratum loams, 0 to 6 percent slopes ... 181
271—Delpoint-Cabbart loams, 6 to 30 percent slopes ... 183
272—Delpoint-Yamacall-Cabbart loams, 3 to 30 percent slopes ... 185
273—Delpoint-Yamacall-Cabbart loams, wooded, 3 to 30 percent slopes ... 187
274—Denied access ... 190
275—Echeta-Moorhead clay loams, 0 to 6 percent slopes ... 191
276—Elwop-Mittenbutte-Rock outcrop complex, wooded, 3 to 60 percent slopes ... 193
277—Fairburn-Mittenbutte-Badland complex, 3 to 60 percent slopes ... 195
278—Fairburn-Samsil-Badland complex, 10 to 45 percent slopes ... 198
279—Fairburn-Samsil-Badland complex, wooded, 6 to 50 percent slopes ... 201
280—Felix clay, 0 to 2 percent slopes ... 203
281—Foreleft loam, 0 to 6 percent slopes ... 204
282—Foreleft-Bonfri loams, 3 to 15 percent slopes ... 206
283—Gateson-Xema-Mittenbutte fine sandy loams, wooded, 3 to 30 percent slopes ... 208
284—Haverdad clay loam, 0 to 3 percent slopes ... 211
285—Haverdad-Boruff complex, 0 to 3 percent slopes ... 212
286—Havre-Bigsandy loams, 0 to 3 percent slopes ... 213
287—Hiland-Bowbac association, 3 to 15 percent slopes ... 215
288—Hiland-Bowbac fine sandy loams, 0 to 6 percent slopes ... 217
289—Hiland-Bowbac fine sandy loams, 6 to 15 percent slopes ... 219
290—Hiland-Decolney complex, 3 to 15 percent slopes ... 221
291—Ironbutte-Fairburn-Mittenbutte complex, wooded, 3 to 60 percent slopes ... 223
292—Jaywest-Jaywest, stratified substratum loams, 0 to 6 percent slopes ... 226
293—Jaywest, saline substratum-Cedar Butte-Slickspots complex, 0 to 6 percent slopes ... 228
294—Kirby-Cabbart-Blacksheep complex, wooded, 6 to 45 percent slopes ... 230

295—Lismas-Sabatka-Xema complex, 3 to 15 percent slopes 232
296—Megonot-Yawdim clay loams, 3 to 15 percent slopes 235
297—Muleherder-Ironbutte channery loams, wooded, 10 to 60 percent slopes 237
298—Nuncho clay loam, 0 to 6 percent slopes 239
299—Oldwolf-Fairburn loams, 3 to 15 percent slopes 240
300—Oshoto-Klinedraw silt loams, 0 to 6 percent slopes 242
301—Oshoto-Klinedraw silt loams, 6 to 15 percent slopes 244
302—Oshoto-Moorhead complex, 0 to 6 percent slopes 246
303—Oshoto-Ziggy silt loams, 0 to 6 percent slopes 248
304—Parmleed-Bidman association, 3 to 15 percent slopes 250
305—Pinehill clay loam, 0 to 6 percent slopes 251
306—Pinehill-Pylon clay loams, 3 to 15 percent slopes 253
307—Pinehill complex, 0 to 6 percent slopes 255
308—Pinehill-Pylon loams, 3 to 15 percent slopes 256
309—Pitchdraw-Ashollow-Mittenbutte fine sandy loams, 3 to 20 percent slopes 259
310—Rockypoint loam, 0 to 3 percent slopes 261
311—Rockypoint-Boruff complex, 0 to 3 percent slopes 263
312—Rockypoint-Sodawells complex, 0 to 3 percent slopes 264
313—Savageton-Samday clay loams, 3 to 15 percent slopes 266
314—Savageton-Silhouette clay loams, 6 to 15 percent slopes 268
315—Shingle-Taluce-Badland complex, 6 to 45 percent slopes 270
316—Shingle-Taluce-Badland complex, wooded, 6 to 45 percent slopes 273
317—Silhouette-Ulm clay loams, 0 to 6 percent slopes 275
318—Sodawells-Pathfinder-Boruff complex, 0 to 6 percent slopes 277
319—Spottedhorse-Leiter Complex, 0 to 6 percent slopes 279
320—Stetter clay, 0 to 3 percent slopes 281
321—Swanboy-Cedar Butte-Slickspots complex, 0 to 6 percent slopes 282
322—Toby-Twilight-Blacksheep fine sandy loams, 3 to 30 percent slopes 284
323—Ucross-Fairburn loams, 3 to 15 percent slopes 287
324—Ucross-Fairburn loams, 15 to 45 percent slopes 289
325—Ucross-Fairburn loams, wooded, 10 to 50 percent slopes 291
326—Ucross-Iwait-Fairburn loams, wooded, 3 to 30 percent slopes 293
327—Ulm-Bidman complex, 0 to 6 percent slopes 296
328—Ulm clay loam, 0 to 6 percent slopes 298
329—Ulm clay loam, 3 to 6 percent slopes 299
330—Ulm clay loam, 6 to 10 percent slopes 300
331—Valent-Duneland complex, 3 to 15 percent slopes 302
332—Vanstel-Pinehill complex, 0 to 6 percent slopes 303
333—Vonalee-Terro-Taluce fine sandy loams, 3 to 30 percent slopes 305
334—Vonalf-Xema-Mittenbutte fine sandy loams, 3 to 30 percent slopes 307
335—Wibaux-Shingle-Taluce complex, 6 to 40 percent slopes 310
336—Wibaux-Shingle-Taluce complex, wooded, 6 to 40 percent slopes 313
337—Winler-Twotop clays, 0 to 6 percent slopes 316
338—Zigweid-Cambria loams, 0 to 6 percent slopes 317
339—Zigweid-Kishona-Cambria complex, 6 to 15 percent slopes 319

Classification of the Soils 323

Soil Series and Their Morphology 324
- Absted Series 324
- Arvada Series 325
- Arwite Series 326
- Ashollow Series 328
- Bidman Series 329

Bigsandy Series 330
Blacksheep Series 331
Bonfri Series 332
Bonfri Series, deep phase 333
Boruff Series 334
Bowbac Series 335
Brislawn Series 336
Cabbart Series 338
Cambria Series 339
Cedar Butte Series 340
Clarkelen Series 341
Coaliams Series 342
Cromack Series 344
Cushman Series 345
Decolney Series 346
Deekay Series 347
Delpoint Series 348
Draknab Series 349
Echeta Series 350
Elwop Series 351
Fairburn Series 352
Felix Series 353
Foreleft Series 354
Forkwood Series 356
Gateson Series 357
Haverdad Series 358
Havre Series 359
Heldt Series 360
Hiland Series 361
Hilight Series 362
Ironbutte Series 363
Iwait Series 364
Jaywest Series 365
Julesburg Series 366
Keeline Series 367
Keyner Series 368
Kirby Series 370
Kishona Series 371
Klinedraw Series 371
Leiter Series 373
Lismas Series 374
Megonot Series 375
Mittenbutte Series 376
Moorhead Series 377
Moskee Series 378
Muleherder Series 379
Niobrara Series 380
Nuncho Series 381
Oldwolf Series 382
Orpha Series 383
Oshoto Series 384
Parmleed Series 385
Pathfinder Series 386
Pinehill Series 387

Pitchdraw Series 388
Platmak Series 389
Pylon Series 390
Recluse Series 391
Renohill Series 392
Rockybutte Series 394
Rockypoint Series 395
Sabatka Series 396
Samday Series 397
Samsil Series 398
Savageton Series 398
Shingle Series 399
Silhouette Series 400
Sodawells Series 401
Spottedhorse Series 402
Stetter Series 403
Swanboy Series 404
Taluce Series 405
Terro Series 406
Theedle Series 407
Toby Series 408
Torriarents 409
Torriorthents 410
Tullock Series 411
Turnercrest Series 411
Twilight Series 412
Twotop Series 413
Ucross Series 414
Ulm Series 415
Ustic Torriorthents 416
Valent Series 417
Vanstel Series 418
Volborg Series 419
Vonalee Series 420
Vonalf Series 421
Wags Series 422
Wibaux Series 423
Winler Series 424
Worf Series 425
Worfka Series 426
Wyarno Series 427
Wyotite Series 428
Xema Series 430
Yamacall Series 431
Yawdim Series 432
Ziggy Series 432
Zigweid Series 433
Use and Management of the Soils 435
Interpretive Ratings 435
Rating Class Terms 435
Numerical Ratings 436
Crops and Pasture 436
Yields per Acre 437
Land Capability Classification 437

- Prime Farmland 438
- Rangeland 439
- Forest Productivity and Management 440
  - Forest Productivity 441
  - Forest Management 441
- Recreation 441
- Hydric Soils 443
- Engineering 444
  - Building Site Development 444
  - Sanitary Facilities 446
  - Agricultural Waste Management 447
  - Construction Materials 447
  - Water Management 448
- Soil Properties 449
  - Engineering Index Properties 449
  - Physical Properties 450
  - Chemical Properties 453
  - Soil Features 453
  - Water Features 454

References 457

Glossary 459

Tables 475

- Temperature and Precipitation 477
- Freeze Dates in Spring and Fall 478
- Growing Season 478
- Acreage and Proportionate Extent of the Soils 479
- Taxonomic Classification of the Soils 482
- Suitability of Soils for Nonirrigated Cropland and Hayland 484
- Nonirrigated Yields by Map Unit Component 492
- Rangeland Productivity 505
- Suitability of Soils for Rangeland Practices 519
- Forestland Productivity 540
- Camp Areas, Picnic Areas, and Playgrounds 542
- Trails and Golf Fairways 569
- Dwellings and Small Commercial Buildings 592
- Roads and Streets, Shallow Excavations, and Lawns and Landscaping 618
- Sewage Disposal 650
- Source of Gravel and Sand 681
- Source of Reclamation Material, Roadfill, and Topsoil 706
- Ponds and Embankments 745
- Engineering Properties 769
- Physical Soil Properties 815
- Chemical Soil Properties 849
- Soil Features 874
- Water Features 897

Issued 2007

Summary of Tables

Acreage and Proportionate Extent of the Soils 479
Camp Areas, Picnic Areas, and Playgrounds 542
Chemical Soil Properties 849
Dwellings and Small Commercial Buildings 592
Engineering Properties 769
Forestland Productivity 540
Freeze Dates in Spring and Fall 478
Growing Season 478
Nonirrigated Yields by Map Unit Component 492
Physical Soil Properties 815
Ponds and Embankments 745
Rangeland Productivity 505
Roads and Streets, Shallow Excavations, and Lawns and Landscaping 618
Sewage Disposal 650
Soil Features 874
Source of Gravel and Sand 681
Source of Reclamation Material, Roadfill, and Topsoil 706
Suitability of Soils for Nonirrigated Cropland and Hayland 484
Suitability of Soils for Rangeland Practices 519
Taxonomic Classification of the Soils 482
Temperature and Precipitation 477
Trails and Golf Fairways 569
Water Features 897

Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

J. Xavier Montoya
State Conservationist
Natural Resources Conservation Service

Where To Get Updated Information

The soil properties and interpretations included in this survey were current as of July 2006. The most current information is available through the Natural Resources Conservation Service Soil Data Mart Website at http://soildatamart.nrcs.usda.gov/ and/or the Natural Resources Conservation Service Web Soil Survey at http://websoilsurvey.nrcs.usda.gov/app.

Additional information is available from the Natural Resources Conservation Service Field Office Technical Guide at Gillette, Wyoming, or online at www.nrcs.usda.gov/technical/efotg. The data in the Field Office Technical Guide are updated periodically.

Additional information about soils and about NRCS is available through the Wyoming NRCS Web page at www.wy.nrcs.usda.gov.

For further information please contact:

USDA, Natural Resources Conservation Service
Gillette Field Office
601 4J Court
Gillette, Wyoming, 82716
Telephone: (307) 682-8843
Fax: (307) 682-5014

Soil Survey of Campbell County, Wyoming, Northern Part

By Craig Prink, Natural Resources Conservation Service

Fieldwork by Craig Prink, Randy White, and Bruce Hayes, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
United States Department of Interior, Bureau of Land Management, United States Department of Agriculture, Forest Service, and the Wyoming Agricultural Experiment Station

This survey updates the Soil Survey Reconnaissance of Campbell County Wyoming, published in 1955 (USDA, SCS). This survey provides additional information and has larger maps, which show the soils in greater detail.

General Nature of the Survey Area

This section gives general information about the survey area. It discusses physiography, relief, and drainage; geology; natural resources; and climate.

Campbell County, Northern Part, is in the northeastern part of Wyoming. (fig. 1) The survey area includes that portion of Campbell County north of Township 51 North, with an area of 1,276,184 acres. Of this, about 1,044,179 acres are privately owned, 177,067 acres are administered by the Bureau of Land management, and 52,358 acres are administered by the Forest Service as part of the Thunder Basin National Grassland. The state administers 2,580 acres.

Agriculture in the survey area is characterized by cattle and sheep production. Approximately 120,000 acres are used for production of commodity crops such as winter wheat, alfalfa hay, and other small grains. Cropland constitutes less than 10 percent of the county. The survey area contains significant mineral reserves. Coal, oil, and natural gas are the principle mineral resources produced in the area. This area also provides habitat for a wide variety of game and non-game species. A large population of pronghorn antelope and mule deer inhabit the region.

This soil survey was made largely to satisfy the demands for resource information brought about by rapid energy development. Most of the mapping was done at an intensity that will facilitate management of the soils for livestock grazing and broad-scale mine land reclamation. In those parts of the survey area where commodity crops are produced, mapping was done so as to facilitate management of the soils for more intense agricultural uses. The lower detail of mapping done on rangeland does not preclude the use of the survey for farm management and reclamation, if the limitations of the lower intensity mapping are duly considered.

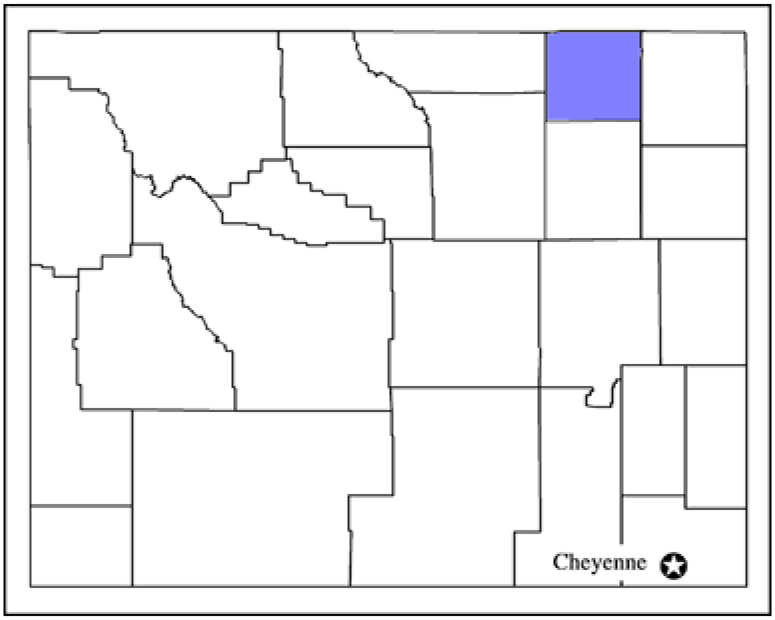


Figure 1. Location of Campbell County in Wyoming.

This survey area adjoins published surveys in Campbell County Southern Part, Crook County, Johnson County Northern Part, Powder River County, Montana, and Sheridan County. Some of the names of adjoining general soil map units and detailed soil map units in this survey are not the same as those in the adjoining soil surveys. The collection of more recent data on the soils has led to the recorrelation, reclassification, or renaming of map units in the Campbell County, Northern Part survey area.

Physiography, Relief, and Drainage

The survey area is in the southern part of the Northern Rolling High Plains. Much of the area can be characterized as rolling prairies. The Cow Creek Breaks occur as steep breaks north of Gillette and along the Adon Road. The Powder River Breaks stand as landmarks in the northwest corner of the survey area. Elevation ranges from about 3,500 feet where the Little Powder River leaves the area in the northeast corner and the Powder River leaves the area in the northwest corner, to 4,600 feet on top of the Little Pine Tree Ridge along Gray Road. The elevation is 4,544 feet at Gillette. Most of the area is 3,500 to 4,600 feet in elevation.

The survey area is drained by two river basins. The eastern part of the area drains in a northerly direction, towards the Little Powder River. The western part of the area drains in a northeasterly direction, towards the Powder River. The major drainages include Bitter Creek, Duck Creek, Elk Creek, Horse Creek, Mitchell Creek, Olmstead Creek, Spottedhorse Creek, Spring Creek, Wildcat Creek, and Wild Horse Creek. Drainage is towards the north.

Geology

By P. Stan Mitchem, Geologist, Natural Resources Conservation Service

Campbell County, Northern Part, lies along the eastern edge of the Powder River structural basin, on the flank of the Black Hills. Mountain building occurred during the Laramide orogeny, from about 65 to 50 million years ago. As the mountains were uplifted, erosion processes wore them away and filled the basins to near overflowing in the early Tertiary. During the Tertiary, the climate was much more wet and humid than at the present time. Large, swampy forests grew across the county. These forests were buried and have become the great coal beds we see today.

The oldest bedrock in the survey area are the Lance and Fox Hills Formations, but they occur only in the northeast corner of the county. The Lance Formation consists of fine- to medium-grained lenticular sandstone, interbedded with sandy siltstone and claystone. The Fox Hills Formation is fine- to medium-grained sandstone interbedded with shale and siltstone.

The Fort Union Formation is the next oldest bedrock and underlies most of the rest of the survey area. The Fort Union Formation is the most important coal-bearing formation in the basin. The Fort Union Formation has been subdivided into three members. These are, from oldest to youngest, the Tullock, Lebo Shale, and Tongue River members. The Tullock member is as much at 1,900 feet thick and composed of a thick sequence of interbedded fine-grained sandstone, coal, and clinker interbedded with shale. (Fogg, et al, 1991) The Lebo Shale member is as much as 3,000 feet thick and consists of dark shale, with interbedded carbonaceous shale, siltstone, and thin coal beds.(Fogg, et al, 1991) The Tongue River member contains seven or more major coal beds and many discontinuous, lenticular sandstone lenses.

The Wasatch Formation is the youngest bedrock mapped in the survey area. It underlies the southwestern third and consists primarily of interbedded sandstone and shale, with a few coal seams in the lower part of the formation. Much of the coal, which occurred within the Wasatch Formation, has burned and left thick beds of hard, red, porcelanite or scoria, known locally as clinker. The baking and fusing of clays in the shale immediately overlying the burning coal produces clinker. The extreme resistance of this material to erosion, coupled with the unequal thickness of the beds, has resulted in the formation of a number of red scoria hills ranging from less than 20 to more than 100 feet high.

Natural Resources

Important natural resources in the survey area are the soil, minerals, and grasses. The mineral resources include coal, oil, and natural gas in addition to construction materials and uranium.

Campbell County is referred to as the "Energy Capital of the United States". It is the largest producer of oil and coal in Wyoming, and produces over 30 percent of all U.S. coal. (Energy Information Administration, 2003) (Lyman, 11/2003) The survey area has one of the largest coal reserves in the world. The coal reserves beneath Campbell County alone could meet national needs for the next 200 years. (Lageson and Spearing, 1988) One of the more prominent coal beds in the basin, the Wyodak, reaches a thickness of nearly 200 feet in western Campbell County. (Fogg, et al, 1991) In 2002, the county produced 332.8 million short tons (89 percent of total Wyoming coal), and by 2008, is expected to produce 350 million tons annually. (Lyman, 11/2003) The coal is subbituminous in grade and low in sulfur, making it less polluting and more valuable.

Coal deposits underlie much of the survey area, but with the dip of the bedrock, their proximity to the surface is the least in the eastern one-third of the area. Development and production of these resources has led to significant cultural development in the area. The first open pit coal mine in Wyoming, the Wyodak Resources Mine east of Gillette, opened in 1925. At the present time, 12 mines are producing coal in Campbell County. (Lyman, 6/2003)

Commercial oil and gas activity in Campbell County began in the late 1940's, but the first significant oil discovery occurred in 1956 at Raven Creek in the northeastern part of the survey area. Discovery of the Hilight field in February 1969, with over 200 completed wells, is the largest field in the county, and was one of the more significant finds in northeastern Wyoming. Two fields, Hartzog Draw and Buck Draw North, currently rank among the top oil producers in the state. (Wyoming Oil and Gas Conservation Commission, 2002)

Campbell County is Wyoming's highest producer of oil, nearly 20 percent of the oil produced in the state. In 2002, over 10 million barrels (42 US gallons per barrel) of oil were produced by wells in 280 fields in Campbell County. (Wyoming Oil and Gas Conservation Commission, 2002)

Campbell County is Wyoming's second highest producer of natural gas. Natural gas that has been generated during the coalification process and trapped in the coal particles is known as coalbed methane. Water wells are completed in the coalbed, and when pumped, reduce the hydrostatic pressure holding the methane. The gas can flow up the annulus, where it is metered and compressed for pipeline shipment. Over 12,700 coalbed wells had been drilled by March 2004. (Wyoming Oil and Gas Conservation Commission, 2002)

While the future of uranium mining in the United States and Wyoming is uncertain, Wyoming had for many years been the leading uranium-producing state. (Harris, 2003) Commercial grade uranium was first discovered in Wyoming at Pumpkin Buttes in 1951. Since 1953, a total of at least 55 different mines have been in operation in the survey area. (Brekenridge, et al, 1974) At present, uranium is not being mined in the county.

Numerous sand, gravel, and scoria pits can be found in the survey area. These materials are used for aggregate, highway and railroad construction, and other building purposes. Sands and gravels occur as alluvial deposits and are limited primarily to the low terraces along the Belle Fourche River. Scoria deposits occur erratically throughout the eastern and north-central part of the survey area. The suitability of scoria varies considerably, but it has been quarried and used as road gravel, creating red-colored roads. (Brekenridge, et al, 1974)

Climate

The “Temperature and Precipitation” table provides data for the survey area as recorded at Gillette in the period 1961 to 1990. The “Freeze Date in Spring and Fall” table shows probable dates of the first freeze in fall and the last freeze in spring. The “Growing Season” table data on length of the growing season.

In winter, the average temperature is 27.3 degrees F and the average daily minimum temperature is 16.4 degrees. In summer, the average temperature is 67.5 degrees and the average daily maximum temperature is 80.1 degrees.

The total annual precipitation is about 16.7 inches. Of this, 10.8 inches, or 64.5 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 5.3 inches.

The average seasonal snowfall is about 66.6 inches.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, variations in the intensity of mapping, or in the extent of the soils in the survey area.

General Soil Map Units

The general soil map in this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

The State Soil Geographic Data Base (STATSGO) for Wyoming is the base for the General Soil Map of Campbell County, Wyoming, Northern Part. In each major soil group one, two, or three of the major soils or miscellaneous land types that occur within the map unit are listed for the map symbol in the survey area. For more information about the General Soil Map units, refer to the STATSGO map for Wyoming.

SOILS ON THE UPLANDS

Areas of shallow, moderately deep and very deep soils on alluvial fans, fan remnants, hills, plateaus, and ridges

2—Lismas-Winler-Swanboy

Nearly level to steep, shallow to very deep, fine textured soils on alluvial fans, hills, and ridges

This unit is about 25 percent Lismas and similar soils, 20 percent Winler and similar soils, and 15 percent Swanboy and similar soils. Slopes are 0 to 25 percent.

The gently sloping to steep Lismas soils are on hills and ridges. They are shallow over shale. Lismas soils surface layer is clay loam about 3 inches thick. The subsoil is clay 13 inches thick. Shale is at a depth of 16 inches.

The gently sloping or strongly sloping Winler soils are on hills and ridges. They are moderately deep over non-acid shale. The surface layer is clay about 4 inches thick; the subsurface is clay to a depth of 60 inches or more.

The nearly level to gently sloping Swanboy soils are on alluvial fans. They are very deep. The surface layer is clay about 4 inches thick. The subsoil is clay to a depth of 60 inches or more.

Included in this unit are minor areas of the coarse-textured Xema soil.

This unit is used for livestock grazing and wildlife habitat. The production of vegetation suitable for livestock grazing is limited by low annual precipitation and by the very low available water capacity and limited rooting depth of the Lismas soil.

All areas of this unit provide yearly habitats for mule deer. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, and birds common to shrub steppes, pastures, and prairies.

42—Fairburn-Oldwolf-Xema

Gently sloping to steep, shallow to moderately deep, moderately coarse and medium textured soils on hills and ridges

This unit is about 25 percent Fairburn and similar soils, 20 percent Oldwolf and similar soils, and 15 percent Xema and similar soils. Slopes are 0 to 60 percent.

The gently sloping to steep Fairburn soils are on hills and ridges. They are shallow over shale. The surface layer is loam about 4 inches thick. The subsoil is loam 11 inches thick. Shale is at a depth of 15 inches.

The gently to strongly sloping Oldwolf soils are on hills and ridges. They are moderately deep over shale. The surface layer is loam about 3 inches thick. The upper 18 inches of the subsoil are clay loam. The lower 11 inches of the subsoil are loam. Shale is at a depth of 32 inches.

The gently sloping or strongly sloping Xema soils are on hills and ridges. They are moderately deep over sandstone. The surface layer is fine sandy loam about 4 inches thick. The subsoil is fine sandy loam 27 inches thick. Sandstone is at a depth of 31 inches.

Included in this unit are minor areas of the very deep, medium-textured Deekay soil and the very deep, fine-textured Jaywest soils.

This unit is used for rangeland, nonirrigated cropland, and wildlife habitat. The production of vegetation suitable for livestock grazing is limited by low annual precipitation. If these soils are used for nonirrigated cropland, the main limitations are low annual precipitation and moderate hazard of wind and water erosion.

This unit provides year-round habitat for mule deer and antelope. It is more intensively used by mule deer during the winter. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, and prairies.

43—Delpoint-Yamacall-Cabbart

Gently sloping to moderately steep, shallow to very deep, medium textured soils on hills and ridges

This unit is about 30 percent Delpoint and similar soils, 20 percent Yamacall and similar soils, and 15 percent Cabbart and similar soils. Slopes are 0 to 60 percent.

The gently sloping or moderately steep Delpoint soils are on hills and ridges. They are moderately deep over shale. The surface layer is loam about 4 inches thick. The upper 13 inches of the subsoil are clay loam. The lower 16 inches of the subsoil are loam. Shale is at a depth of 33 inches.

The gently sloping to moderately steep Yamacall soils are on hills and ridges. They are very deep. The surface layer is loam about 3 inches thick. The subsoil is loam to 60 inches or more.

The gently sloping to moderately steep Cabbart soils are on hills and ridges. They are shallow over shale. The surface layer is loam about 3 inches thick. The subsoil is loam 12 inches thick. Shale is at a depth of 15 inches.

Included in this unit are minor areas of the coarse-textured Toby and Twilight soils.

This unit is used for rangeland and wildlife habitat. The main limitations are slope and the broken, dissected topography, both of which limit the movement of and access by livestock. The production of vegetation suitable for livestock grazing is limited by low annual precipitation.

This unit provides year-round habitat for mule deer and antelope. It is more intensively used by mule deer during the winter. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, and prairies.

45—Ucross-Fairburn-Jaywest

Nearly level to moderately steep, shallow to very deep, medium and fine textured soils on alluvial fans, fan remnants, hills, and ridges

This unit is about 30 percent Ucross and similar soils, 20 percent Fairburn and similar soils, and 15 percent Jaywest and similar soils. Slopes are 0 to 60 percent.

The gently sloping to moderately steep Ucross soils are on hills and ridges. They are moderately deep over interbedded sandstone and shale. The surface layer is loam about 5 inches thick. The subsoil is clay loam 26 inches thick. Shale is at a depth of 31 inches.

The gently sloping to moderately steep Fairburn soils are on hills and ridges. They are shallow over interbedded sandstone and shale. The surface layer is loam about 4 inches thick. The subsoil is loam 11 inches thick. Shale is at a depth of 15 inches.

The nearly level to strongly sloping Jaywest soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is loam about 7 inches thick. The upper 5 inches of the subsoil are clay loam, the next 24 inches are clay, and the lower 24 inches are clay loam.

Included in this unit are minor areas of the shallow, fine-textured Samsil soil and the coarse-textured Xema soil.

This unit is used for rangeland, nonirrigated cropland, and wildlife habitat. The production of vegetation suitable for livestock grazing is limited by low annual precipitation. If these soils are used for nonirrigated cropland, the main limitations are low annual precipitation and moderate hazard of wind and water erosion.

This unit provides year-round habitat for mule deer and antelope. It is more intensively used by mule deer during the winter. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, and prairies.

46—Cabbart-Kirby-Yawdim

Moderately sloping to very steep, shallow to very deep, coarse, medium, and fine textured soils on hills and ridges

This unit is about 30 percent Cabbart and similar soils, 20 percent Kirby and similar soils, and 15 percent Yawdim and similar soils. Slopes are 0 to 60 percent.

The moderately sloping to very steep Cabbart soils are on hills and ridges. They are shallow over interbedded sandstone and shale. The surface layer is loam about 3 inches thick. The subsoil is loam 12 inches thick. Shale is at a depth of 15 inches.

The moderately sloping to very steep Kirby soils are on hills and ridges. They are very deep. The surface layer is channery loam about 4 inches thick. The subsoil is very channery loam 13 inches thick. The substratum is fractured porcelanite to a depth of 60 inches or more.

The moderately sloping to very steep Yawdim soils are on hills and ridges. They are shallow over shale. The surface layer is clay loam about 3 inches thick. The subsoil is clay 13 inches thick. Shale is at a depth of 16 inches.

Included in this unit are minor areas of Badland and the very deep Foreleft soil.

This unit is used for rangeland and wildlife habitat. The main limitations are slope and the broken, dissected topography, both of which limit the movement of and access by livestock. The production of vegetation suitable for livestock grazing is limited by low annual precipitation.

This unit provides year-round habitat for mule deer. It is more intensively used by mule deer during the winter, and the Bitter Creek drainage is particularly important. The scoria breaks along Olmstead Creek are important habitat for antelope. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. The Olmstead Creek drainage is used by Merriam’s wild turkeys. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, and prairies.

49—Shingle-Theedle-Bidman

Nearly level to very steep, shallow to very deep, medium and fine textured soils on alluvial fans, fan remnants, hills, and ridges

This unit is about 30 percent Shingle and similar soils, 30 percent Theedle and similar soils, and 10 percent Bidman and similar soils. Slopes range from 0 to 75 percent.

The moderately sloping to very steep Shingle soils are on hills and ridges. They are shallow over interbedded sandstone and shale. The surface layer is loam about 2 inches thick. The underlying layer is loam 10 inches thick. Shale is at a depth of 12 inches.

The moderately sloping to very steep Theedle soils are on hills and ridges. They are moderately deep over interbedded sandstone and shale. The surface layer is loam about 2 inches thick. The upper 10 inches of the underlying material are loam and the lower 16 inches are clay loam to a depth of 28 inches.

The nearly level to strongly sloping Bidman soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is loam about 5 inches thick. The upper 13 inches are clay. The lower 42 inches are clay loam to a depth of 60 inches or more.

Included in this unit are minor areas of the very deep, medium-textured Hiland and Kishona soils, the moderately deep, fine-textured Parmleed soil, the very deep, fine-textured, alkaline Absted soil, and the very deep, flooded Boruff and Haverdad soils.

This unit is used for livestock grazing and wildlife habitat. The production of vegetation suitable for livestock grazing is limited by low annual precipitation and by the very low available water capacity and limited rooting depth of the Shingle soil.

This unit provides year-round habitat for mule deer and antelope. It is more intensively used by mule deer during the winter. The rolling hills and agricultural lands along Highway 14/16 are important year-round habitat for antelope. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, and prairies.

51—Bidman-Ulm-Wyarno

Nearly level to strongly sloping, very deep, fine textured soils on alluvial fans, fan remnants, hills, and ridges

This unit is about 25 percent Bidman and similar soils, 20 percent Ulm and similar soils, and 20 percent Wyarno and similar soils. Slopes range from 0 to 15 percent.

The nearly level to strongly sloping Bidman soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is loam about 5 inches thick. The upper 13 inches of the subsoil are clay. The lower 42 inches are clay loam to a depth of 60 inches or more.

The nearly level to strongly sloping Ulm soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is clay loam about 4 inches thick. The upper 21 inches of the subsoil are clay. The lower 35 inches of the subsoil are clay loam to a depth of 60 inches or more.

The nearly level to strongly sloping Wyarno soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is clay loam about 5 inches thick. The subsoil is clay loam to a depth of 60 inches or more.

Included in this unit are minor areas of the medium-textured Forkwood, Theedle, and Zigweid soils, the shallow Shingle soil, the moderately deep, fine-textured Parmleed and Renohill soils, the fine-textured, alkaline Absted soil, and the flooded Haverdad and Boruff soils.

This unit is used for rangeland, nonirrigated cropland, and wildlife habitat. The production of vegetation suitable for livestock grazing is limited by low annual precipitation. If these soils are used for nonirrigated cropland, the main limitations are low annual precipitation and moderate hazard of wind and water erosion.

This unit provides year-round habitat for mule deer and antelope. It is more intensively used by mule deer during the winter, especially in the Wild Horse Creek drainages. The rolling hills and agricultural lands along Highway 14/16 are important year-round habitat for antelope. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, and prairies.

53—Cushman-Forkwood-Shingle

Nearly level to moderately steep, shallow, moderately deep, and very deep, medium textured soils on alluvial fans, fan remnants, hills, and ridges

This unit is about 25 percent Cushman and similar soils, 25 percent Forkwood and similar soils, and 15 percent Shingle and similar soils. Slopes are 0 to 30 percent.

The nearly level to strongly sloping Cushman soils are on hills and ridges. They are moderately deep over interbedded sandstone and shale. The surface layer is loam about 2 inches thick. The upper 9 inches of the subsoil are loam, the next 12 inches are clay loam, and the lower 7 inches are loam. Shale is at a depth of 30 inches.

The nearly level to strongly sloping Forkwood soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is loam about 2 inches thick. The upper 39 inches of the subsoil are clay loam. The lower part of the subsoil is loam to a depth of 60 inches or more.

The moderately sloping to moderately steep Shingle soils are on hills and ridges. They are shallow over interbedded sandstone and shale. The surface layer is loam about 2 inches thick. The underlying layer is loam 10 inches thick. Shale is at a depth of 12 inches.

Included in this unit are minor areas of the coarse-textured Vonalf and Xema soils.

The Cushman and Forkwood soils are used for livestock grazing, hayland and pasture, and wildlife habitat. The Shingle soils are used primarily for livestock grazing and wildlife habitat. The production of vegetation suitable for livestock grazing is limited by low annual precipitation and by the very low available water capacity and limited rooting depth of the Shingle soil. If the Cushman and Forkwood soils are used for hayland and pasture, the main limitation is low annual precipitation.

This unit provides year-round habitat for mule deer and antelope. It is more intensively used by mule deer during the winter. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, and prairies.

113—Shingle-Samday-Badland

Gently sloping to very steep, shallow, medium to fine textured soils and Badland on hills and ridges

This unit is about 40 percent Shingle and similar soils, 20 percent Samday and similar soils, and 15 percent Badland. Slopes are 3 to 65 percent.

The gently sloping to very steep Shingle soils are on hills and ridges. They are shallow over interbedded sandstone and shale. The surface layer is loam about 2 inches thick. The underlying layer is loam 10 inches thick. Shale is at a depth of 12 inches.

The gently sloping to very steep Samday soils are on hills and ridges. They are shallow over interbedded sandstone and shale. The surface layer is clay loam about 2 inches thick. The underlying layer is silty clay 14 inches thick. Shale is at a depth of 16 inches.

Badland consists of very steep, barren areas of exposed interbedded sandstone and shale on hills and ridges.

Included in this unit are minor areas of the moderately deep Cushman and Theedle soils, the very deep Forkwood, Cambria, and Zigweid soils, and the flooded Haverdad and Boruff soils.

This unit is used for rangeland and wildlife habitat. The main limitations are slope and the broken, dissected topography, both of which limit the movement of and access by livestock. The production of vegetation suitable for livestock grazing is limited by low annual precipitation.

This unit provides year-round habitat for mule deer, and is more intensively used by mule deer during the winter. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, and prairies.

126—Arwite-Vonalf-Moorhead

Nearly level to strongly sloping, very deep, moderately coarse, medium, and fine textured soils on alluvial fans, fan remnants, hills, and ridges

This unit is about 30 percent Arwite and similar soils, 20 percent Vonalf and similar soils, and 15 percent Moorhead and similar soils. Slopes are 0 to 15 percent.

The nearly level to strongly sloping Arwite soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is fine sandy loam about 5 inches thick. The upper 27 inches of the subsoil are sandy clay loam. The lower part of the subsoil is fine sandy loam to a depth of 60 inches or more.

The nearly level to strongly sloping Vonalf soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is fine sandy loam about 6 inches thick. The subsoil is fine sandy loam to a depth of 60 inches or more.

The nearly level to strongly sloping Moorhead soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is loam or clay loam about 4 inches thick. The upper 28 inches of the subsoil are clay. The lower part is clay loam to a depth of 60 inches or more.

Included in this unit are minor areas of the shallow Mittenbutte soil.

This unit is used for rangeland, hayland and pasture, nonirrigated cropland, and wildlife habitat. The production of vegetation suitable for livestock grazing is limited by low annual precipitation. If the Arwite soils and Vonalf soils are used for nonirrigated cropland, the main limitations are low annual precipitation and severe hazard of wind erosion. If the Moorhead soils are used for nonirrigated cropland, the main limitations are low annual precipitation and moderate hazard of wind and water erosion.

This unit provides year-round habitat for mule deer and antelope. It is more intensively used by mule deer during the winter. The rolling hills and agricultural lands along Highway 14/16 are important year-round habitat for antelope. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, and prairies.

384—Cambria-Theedle-Kishona

Gently sloping to moderately steep, moderately deep and very deep, medium textured soils on alluvial fans, fan remnants, hills, and ridges

This unit is about 30 percent Cambria and similar soils, 30 percent Theedle and similar soils, and 15 percent Kishona and similar soils. Slopes are 3 to 30 percent.

The gently to strongly sloping Cambria soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is loam about 2 inches thick. The upper 4 inches of the subsoil are clay loam. The lower part is loam to a depth of 60 inches or more.

The gently sloping to moderately steep Theedle soils are on hills and ridges. They are moderately deep over interbedded sandstone and shale. The surface layer is loam about 2 inches thick. The upper 10 inches of the subsoil are loam. The lower 16 inches are clay loam. Shale is at a depth of 28 inches.

The gently to strongly sloping Kishona soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is loam about 4 inches thick. The subsoil is clay loam to a depth of 60 inches or more.

Included in this unit are minor areas of the flooded Haverdad soil, the shallow Niobrara, Samday, Shingle, and Worf soils, the coarse-textured Orpha and Tullock soils, and the fine-textured Ulm soil.

This unit is used for livestock grazing and wildlife habitat. The production of vegetation suitable for livestock grazing is limited by low annual precipitation.

This unit provides year-round habitat for mule deer and antelope. Mule deer and antelope more intensively use it during the winter, especially in the Fortification Creek drainages. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord's kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, and prairies.

385—Ucross-Deekay-Fairburn

Nearly level to moderately steep, shallow, moderately deep and very deep, medium textured soils on alluvial fans, fan remnants, hills, and ridges

This unit is about 30 percent Ucross and similar soils, 25 percent Deekay and similar soils, and 15 percent Fairburn and similar soils. Slopes are 0 to 30 percent.

The gently sloping to moderately steep Ucross soils are on hills and ridges. They are moderately deep over interbedded sandstone and shale. The surface layer is loam about 5 inches thick. The subsoil is clay loam 26 inches thick. Shale is at a depth of 31 inches.

The nearly level to strongly sloping Deekay soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is loam about 4 inches thick. The upper 20 inches of the subsoil are clay loam. The lower part is loam to a depth of 60 inches or more.

The gently sloping to moderately steep Fairburn soils are on hills and ridges. They are shallow over interbedded sandstone and shale. The surface layer is loam about 4 inches thick. The subsoil is loam 11 inches thick. Shale is at a depth of 15 inches.

Included in this unit are minor areas of the coarse-textured Ironbutte soil and the fine-textured Jaywest, Leiter, and Spottedhorse soils.

Ucross and Fairburn soils are used primarily for livestock grazing and wildlife habitat. Deekay soils are used for livestock grazing, hayland and pasture, and wildlife habitat. The production of vegetation suitable for livestock grazing is limited by low annual precipitation and by the very low available water capacity and limited rooting depth of the Fairburn soils. If the Deekay soils are used for hayland and pasture, the main limitation is low annual precipitation.

This unit provides year-round habitat for mule deer and antelope. It is more intensively used by mule deer during the winter, especially in the Wild Horse and Bitter Creek drainages. Scoria breaks in this unit are important for antelope, especially in the White Tail and Horse Creek drainages. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord's kangaroo rat, desert cottontail, coyote, red fox, badgers, and birds common to shrub steppes, pastures, and prairies.

386—Deekay-Moorhead-Oldwolf

Nearly level to strongly sloping, moderately deep and very deep, medium and fine textured soils on alluvial fans, fan remnants, hills, and ridges

This unit is about 30 percent Deekay and similar soils, 25 percent Moorhead and similar soils, and 20 percent Oldwolf and similar soils. Slopes are 0 to 15 percent.

The nearly level to strongly sloping Deekay soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is loam about 4 inches thick. The upper 20 inches of the subsoil are clay loam. The lower part is loam to a depth of 60 inches or more.

The nearly level to strongly sloping Moorhead soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is clay loam about 4 inches thick. The upper 28 inches of the subsoil are clay. The lower part is clay loam to a depth of 60 inches or more.

The nearly level to strongly sloping Oldwolf soils are on hills and ridges. They are moderately deep over interbedded sandstone and shale. The surface layer is loam about 4 inches thick. The upper 16 inches of the subsoil are clay loam. The lower 14 inches are loam. Shale is at a depth of 34 inches.

Included in this unit are minor areas of the shallow Fairburn and Lismas soils and the moderately deep Leiter and Ucross soils.

This unit is used for livestock grazing, hayland and pasture, nonirrigated cropland, and wildlife habitat. The production of vegetation suitable for livestock grazing and use for hayland and pasture are limited by low annual precipitation. If this unit is used for nonirrigated cropland, the main limitations are low annual precipitation and moderate hazard of wind and water erosion.

This unit provides year-round habitat for mule deer and antelope. It is more intensively used by mule deer during the winter, especially in the Wild Horse Creek drainages. The rolling hills and agricultural lands along Highway 14/16 are important year-round habitat for antelope. The scoria breaks in the Wildcat, Horse, and Bar Creek drainages are also important antelope habitat areas. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badgers, and birds common to shrub steppes, pastures, and prairies.

387—Theedle-Shingle-Samday

Gently sloping to steep, shallow and moderately deep, medium and fine textured soils on hills and ridges

This unit is about 30 percent Theedle and similar soils, 25 percent Shingle and similar soils, and 20 percent Samday and similar soils. Slopes are 3 to 60 percent.

The gently sloping to moderately steep Theedle soils are on hills and ridges. They are moderately deep over interbedded sandstone and shale. The surface layer is loam about 2 inches thick. The upper 10 inches of the subsoil are loam. The lower 16 inches are clay loam. Shale is at a depth of 28 inches.

The moderately sloping to steep Shingle soils are on hills and ridges. They are shallow over interbedded sandstone and shale. The surface layer is loam about 2 inches thick. The underlying layer is loam 10 inches thick. Shale is at a depth of 12 inches.

The moderately sloping to steep Samday soils are on hills and ridges. They are shallow over shale. The surface layer is clay loam about 2 inches thick. The underlying layer is silty clay 14 inches thick. Shale is at a depth of 16 inches.

Included in this unit are minor areas of the very deep medium-textured Forkwood and Kishona soils, the moderately deep, coarse-textured Terro soil, the very deep, coarse-textured Wibaux soil, and Badland.

This unit is used for livestock grazing and wildlife habitat. The production of vegetation suitable for livestock grazing is limited by low annual precipitation and by the very low available water capacity and limited rooting depth of the Shingle and Samday soils.

This unit provides year-round habitat for mule deer, and is more intensively used by mule deer during the winter. The scoria breaks at the head of the Fortification Creek watershed are important winter habitat for antelope. The Fortification, Bull, and Deer Creek watersheds are important year-round, and especially parturition, habitat for elk. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, and prairies.

396—Deekay-Jaywest-Oldwolf

Nearly level to strongly sloping, moderately deep to very deep, medium to fine textured soils on alluvial fans, fan remnants, hills, and ridges

This unit is about 35 percent Deekay and similar soils, 20 percent Jaywest and similar soils, and 15 percent Oldwolf and similar soils. Slopes are 0 to 60 percent.

The nearly level to strongly sloping Deekay soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is loam about 4 inches thick. The upper 20 inches of the subsoil are clay loam. The lower part is loam to a depth of 60 inches or more.

The nearly level to strongly sloping Jaywest soils are on alluvial fans, fan remnants, hills, and ridges. They are very deep. The surface layer is loam about 7 inches thick. The upper 5 inches of the subsoil are clay loam. The next 24 inches are clay, and the lower part is clay loam to a depth of 60 inches or more.

The nearly level to strongly sloping Oldwolf soils are on hills and ridges. They are moderately deep over interbedded sandstone and shale. The surface layer is loam about 4 inches thick. The upper 16 inches of the subsoil are clay loam. The lower 14 inches are loam. Shale is at a depth of 34 inches.

Included in this unit are minor areas of the shallow Fairburn and Lismas soils and the moderately deep Spottedhorse and Ucross soils.

This unit is used for livestock grazing, hayland and pasture, nonirrigated cropland, and wildlife habitat. The production of vegetation suitable for livestock grazing and use for hayland and pasture are limited by low annual precipitation. If this unit is used for nonirrigated cropland, the main limitations are low annual precipitation and moderate hazard of wind and water erosion.

This unit provides year-round habitat for mule deer and antelope. It is more intensively used by mule deer and antelope during the winter, especially the lower drainages of the Wildcat, Horse, White Tail, and Olmstead Creek watersheds. It provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Merriam’s wild turkeys utilize the Elk and Olmstead Creek drainages, as well as the Weston Hills area west of Weston. Sharp-tailed grouse use mixed shrub/grass habitats near Weston. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, and prairies.

398—Ironbutte-Jaywest-Rockybutte

Nearly level to steep, very deep, coarse, medium, and fine textured soils on hills, plateaus, and ridges

This unit is about 35 percent Ironbutte and similar soils, 20 percent Jaywest and similar soils, and 15 percent Rockybutte and similar soils. Slopes are 0 to 60 percent.

The moderately sloping to steep Ironbutte soils are on hills, plateaus, and ridges. They are very deep. The surface layer of the Ironbutte soils is channery loam about 4 inches thick. The upper part of the underlying material is very channery loam 8 inches thick. The lower part is fractured porcelanite to a depth of 60 inches or more.

The nearly level to moderately sloping Jaywest soils are on hills, plateaus, and ridges. They are very deep. The surface layer is loam about 7 inches thick. The upper 5 inches of the subsoil are clay loam. The next 24 inches are clay. The lower part is clay loam to a depth of 60 inches or more.

The nearly level to moderately sloping Rockybutte soils are on hills, plateaus, and ridges. They are very deep. The surface layer is loam about 4 inches thick. The upper 12 inches of the subsoil are clay loam and channery clay loam. The next 7 inches are very channery clay loam and the next 6 inches are extremely channery loam. The substratum is fractured porcelanite to a depth of 60 inches or more.

Included in this unit are minor areas of the shallow Fairburn, Lismas, and Mittenbutte soils and the moderately deep Xema soil.

This unit is used for livestock grazing and wildlife habitat. The production of vegetation suitable for livestock grazing is limited by low annual precipitation and by the very low available water capacity and limited rooting depth of the Wibaux soils.

This unit provides year-round habitat for mule deer and antelope. It is more intensively used by mule deer during the winter in the Bitter Creek drainage. The scoria breaks along the Bar, Olmstead, White Tail, Horse, and Wildcat Creek drainages are important for antelope during the winter. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. The Olmstead and Elk Creek drainages and the Weston Hills are important habitat for Merriam’s wild turkey. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, and prairies.

399—Lismas-Sabatka-Ironbutte

Gently sloping to steep, shallow, moderately deep and deep, coarse and fine textured soils on hills and ridges

This unit is about 25 percent Lismas and similar soils, 20 percent Sabatka and similar soils, and 20 percent Ironbutte and similar soils. Slopes are 3 to 60 percent.

The gently sloping to steep Lismas soils are on hills and ridges. They are shallow over shale. The surface layer is clay loam about 3 inches thick. The underlying layer is clay 13 inches thick. Shale is at a depth of 16 inches.

The gently sloping to moderately steep Sabatka soils are on hills and ridges. They are moderately deep over shale. The surface layer is clay loam about 3 inches thick. The subsoil is clay 27 inches thick. Shale is at a depth of 30 inches.

The moderately sloping to steep Ironbutte soils are on hills and ridges. They are very deep. The surface layer is channery loam about 4 inches thick. The underlying layer is very channery loam 8 inches thick. The next layer is fractured porcelanite to a depth of 60 inches or more.

Included in this unit are minor areas of the shallow Samsil soil, the fine-textured, moderately deep Ucross soils, the coarse-textured Xema soil, and Badland.

This unit is used for livestock grazing and wildlife habitat. The production of vegetation suitable for livestock grazing is limited by low annual precipitation, low to very low available water capacity of the Lismas, Sabatka, and Ironbutte soils, and by the limited rooting depth of the Lismas and Ironbutte soils.

This unit provides year-round habitat for mule deer and antelope. It is more intensively used by mule deer during the winter near the Little Powder River. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. The Cow Creek Breaks west of Adon are important habitat for Merriam’s wild turkey. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, coyote, red fox, badger, and birds common to shrub steppes, pastures, prairies, and ponderosa pine.

SOILS IN VALLEYS

Areas of dominantly very deep soils on alluvial fans, fan remnants, flood plains, and stream terraces

44—Rockypoint-Sodawells-Pathfinder

Nearly level to gently sloping, very deep, well to excessively drained, coarse to medium textured soils on flood plains and stream terraces

This unit is about 30 percent Rockypoint and similar soils, 25 percent Sodawells and similar soils, and 15 percent Pathfinder and similar soils. Slopes are 0 to 6 percent.

The nearly level Rockypoint soils are on flood plains and stream terraces. They are very deep. The surface layer is loam about 4 inches thick. The upper 26 inches of the underlying material are clay loam stratified with fine sandy loam, loam and silty clay loam. The lower part is loam stratified with very fine sandy loam, fine sandy loam, clay loam, and silt loam to a depth of 60 inches or more. Rockypoint soils are subject to occasional flooding for very brief periods from March through June.

The nearly level Sodawells soils are on flood plains and stream terraces. They are very deep. The surface layer is fine sandy loam about 5 inches thick. The underlying material is fine sandy loam stratified with loamy fine sand, very fine sandy loam, and silt loam to a depth of 60 inches or more. Sodawells soils are subject to occasional flooding for very brief periods from March through June.

The nearly level to gently sloping Pathfinder soils are on flood plains and stream terraces. They are very deep. The surface layer is fine sandy loam about 5 inches thick. The underlying material is loamy fine sand stratified with fine sand and fine sandy loam to a depth of 60 inches or more. Pathfinder soils are subject to occasional flooding for very brief periods from March through June.

Included in this unit are minor areas of the poorly drained, flooded Boruff soil and the well drained, not flooded Deekay, Iwait, Jaywest, Pitchdraw, and Ucross soils.

This unit is used for livestock grazing, hayland and pasture, and wildlife habitat. The production of vegetation suitable for livestock grazing and use for hayland and pasture are limited by low annual precipitation.

This unit provides year-round habitat for mule deer and antelope. It is more intensively used by mule deer during the winter, particularly along the Little Powder River. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, watershrew, muskrat, beaver, mink, raccoon, coyote, red fox, badger, and birds common to shrub steppes, pastures, riparian shrubs and trees, and those associated with water.

48—Haverdad-Kishona-Draknab

Nearly level to strongly sloping, very deep, well drained, moderately coarse to medium textured soils on alluvial fans, fan remnants, flood plains, and stream terraces

This unit is about 30 percent Haverdad and similar soils, 30 percent Kishona and similar soils, and 10 percent Draknab and similar soils. Slopes are 0 to 6 percent.

The nearly level Haverdad soils are on flood plains and stream terraces. They are very deep. The surface layer is loam about 4 inches thick. The underlying material is loam stratified with very fine sandy loam, fine sandy loam, sandy clay loam, and silt loam to a depth of 60 inches or more. Haverdad soils are subject to occasional flooding for very brief periods during April through June.

The gently sloping to strongly sloping Kishona soils are on alluvial fans, fan remnants, and stream terraces. They are very deep. The surface layer is loam about 4 inches thick. The underlying layer is clay loam to a depth of 60 inches or more.

The nearly level Draknab soils are on flood plains and stream terraces. They are very deep. The surface layer is fine sandy loam about 5 inches thick. The underlying material is loamy fine sand stratified with fine sandy loam, loamy sandy, and sand to a depth of 60 inches or more. Draknab soils are subject to rare flooding.

Included in this unit are minor areas of the poorly drained, flooded Boruff soil, the well drained, not flooded Cambria and Keeline soils, and the well drained, flooded Clarkelen soil.

This unit is used for livestock grazing, hayland and pasture, irrigated and non-irrigated cropland, and wildlife habitat. The production of vegetation suitable for livestock grazing and use for hayland and pasture are limited by low annual precipitation. Some of the lower lying areas are subject to seasonal flooding.

This unit provides year-round habitat for mule deer and antelope. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, muskrat, beaver, raccoon, mink, coyote, red fox, badger, and birds common to shrub steppes, fields, pastures, areas of wetland shrubs and trees, and riverine corridors.

397—Rockypoint-Iwait-Sodawells

Nearly level to gently sloping, very deep, well drained, moderately coarse to medium textured soils on alluvial fans, fan remnants, flood plains, and stream terraces

This unit is about 30 percent Rockypoint and similar soils, 25 percent Iwait and similar soils, and 20 percent Sodawells and similar soils. Slopes are 0 to 6 percent.

The nearly level Rockypoint soils are on flood plains and stream terraces. They are very deep. The surface layer loam about 4 inches thick. The upper part of the underlying material is clay loam stratified with fine sandy loam, loam, and silty clay loam 26 inches thick. The lower part is loam stratified with very fine sandy loam, fine sandy loam, clay loam, and silt loam to a depth of 60 inches or more. Rockypoint soils are subject to occasional flooding for very brief periods during April through June.

The nearly level to gently sloping Iwait soils are on alluvial fans, fan remnants, and stream terraces. They are very deep. The surface layer is loam about 6 inches thick. The upper 14 inches of the underlying material is loam. The lower part is clay loam to a depth of 60 inches or more.

The nearly level Sodawells soils are on flood plains and stream terraces. They are very deep. The surface layer is fine sandy loam about 5 inches thick. The underlying material is fine sandy loam stratified with loamy fine sand, very fine sandy loam, and silt loam to a depth of 60 inches or more. Sodawells soils are subject to occasional flooding for very brief periods during April through June.

Included in this unit are minor areas of the poorly drained, flooded Boruff soil and the well drained, not flooded Ashollow, Deekay, and Jaywest soils.

This unit is used for livestock grazing, hayland and pasture, and wildlife habitat. The production of vegetation suitable for livestock grazing and use for hayland and pasture are limited by low annual precipitation.

This unit provides year-round habitat for mule deer and antelope. It is particularly important for mule deer during the winter, especially along the Little Powder River. This unit provides nesting areas for golden eagles. Sagebrush communities in this unit are important for sage grouse. Sharp-tailed grouse use mixed shrub/grass communities near Weston. Other habitats in this unit support white-tailed and black-tailed jackrabbits, thirteen-lined ground squirrel, Ord’s kangaroo rat, desert cottontail, watershrew, muskrat, beaver, mink, raccoon, coyote, red fox, badger, and birds common to shrub steppes, pastures, riparian shrubs and trees, and those associated with water.

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a soil series. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into soil phases. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Jaywest saline substratum is a phase of the Jaywest series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes or associations.

A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Deekay-Oldwolf loams, 0 to 6 percent slopes is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Rockypoint-Iwait association, 0 to 6 percent slopes is an example.

This survey includes miscellaneous areas. Such areas have little or no soil material and support little or no vegetation. Badland is an example.

The “Acreage and Proportionate Extent of the Soils” table gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

103—Arwite fine sandy loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Arwite soils: 85 percent
Minor components: 15 percent

Component Descriptions

Arwite soils

Landform: Alluvial fan, fan remnant
Parent material: Alluvium and/or eolian deposits derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 8.5 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent

Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 5 inches; fine sandy loam
Bt—5 to 32 inches; sandy clay loam
Bk—32 to 60 inches; fine sandy loam

Minor Components

Deekay soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Moskee soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ashollow soils
Composition: About 3 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 3 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Vonalf soils
Composition: About 2 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

105—Arwite-Elwop fine sandy loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Arwite soils: 50 percent
Elwop soils: 30 percent
Minor components: 20 percent

Component Descriptions

Arwite soils

Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium and/or eolian deposits derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 8.5 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

A—0 to 5 inches; fine sandy loam
Bt—5 to 32 inches; sandy clay loam
Bk—32 to 60 inches; fine sandy loam

Elwop soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or eolian deposits over residuum weathered from calcareous sandstone
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 5.1 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None

Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; fine sandy loam
Bt—4 to 24 inches; sandy clay loam
Bk—24 to 35 inches; fine sandy loam
Cr—35 to 60 inches; bedrock

Minor Components

Vonalf soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Xema soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Deekay soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Footslope, backslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Oldwolf soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

106—Arwite-Elwop fine sandy loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)

Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Arwite soils: 45 percent
Elwop soils: 35 percent
Minor components: 20 percent

Component Descriptions

Arwite soils

Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium and/or eolian deposits derived from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 8.5 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; fine sandy loam
Bt—5 to 32 inches; sandy clay loam
Bk—32 to 60 inches; fine sandy loam

Elwop soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or eolian deposits over residuum weathered from calcareous sandstone
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 5.1 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)

Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:
A—0 to 4 inches; fine sandy loam
Bt—4 to 24 inches; sandy clay loam
Bk—24 to 35 inches; fine sandy loam
Cr—35 to 60 inches; bedrock

Minor Components

Ashollow soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Footslope, backslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Vonalf soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Xema soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Oldwolf soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

107—Arwite-Vonalf fine sandy loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Arwite soils: 45 percent
Vonalf soils: 35 percent
Minor components: 20 percent

Component Descriptions

Arwite soils

Landform: Alluvial fan, hill, ridge
Hillslope position: Footslope
Parent material: Alluvium and/or eolian deposits derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 8.5 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 5 inches; fine sandy loam
Bt—5 to 32 inches; sandy clay loam
Bk—32 to 60 inches; fine sandy loam

Vonalf soils

Landform: Alluvial fan, hill, ridge
Hillslope position: Footslope
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 0 to 6 percent
Surface fragments: Unspecified

Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 6 inches; fine sandy loam
Bt—6 to 34 inches; fine sandy loam
Bk—34 to 60 inches; fine sandy loam

Minor Components

Elwop soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Deekay soils
Composition: About 5 percent
Landform: Alluvial fan, hill, ridge
Hillslope position: Footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Moskee soils
Composition: About 5 percent
Landform: Ridge, alluvial fan, hill
Hillslope position: Footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Xema soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

122—Cushman-Cambria loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Cushman soils: 50 percent
Cambria soils: 30 percent
Minor components: 20 percent

Component Descriptions

Cushman soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 2 inches; loam
Bt—2 to 23 inches; clay loam
Bk—23 to 30 inches; loam
Cr—30 to 60 inches; bedrock

Cambria soils
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches

Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.3 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 2 inches; loam
Bt—2 to 10 inches; clay loam
Bk—10 to 60 inches; loam

Minor Components

Worf soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Bowbac soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Forkwood soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Zigweid soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

131—Deekay loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Deekay soils: 80 percent
Minor components: 20 percent

Component Descriptions

Deekay soils

Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

A—0 to 4 inches; loam
Bt—4 to 24 inches; clay loam
Bk—24 to 60 inches; loam

Minor Components

Recluse soils

Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Jaywest soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Oshoto soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ziggy soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

132—Deekay-Moorhead loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Deekay soils: 50 percent
Moorhead soils: 35 percent
Minor components: 15 percent

Component Descriptions

Deekay soils
Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent

Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 4 inches; loam
Bt—4 to 24 inches; clay loam
Bk—24 to 60 inches; loam

Moorhead soils
Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.20 in/hr (moderately slow)
Available water capacity: About 11.4 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 5 inches; loam
Bt—5 to 35 inches; clay loam
Bk—35 to 60 inches; clay loam

Minor Components

Jaywest soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Oshoto soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan

Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Recluse soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

133—Deekay-Moorhead loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Deekay soils: 45 percent
Moorhead soils: 40 percent
Minor components: 15 percent

Component Descriptions

Deekay soils
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:
A—0 to 4 inches; loam
Bt—4 to 24 inches; clay loam
Bk—24 to 60 inches; loam

Moorhead soils
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from calcareous shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.20 in/hr (moderately slow)
Available water capacity: About 11.4 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; loam
Bt—5 to 35 inches; clay loam
Bk—35 to 60 inches; clay loam

Minor Components

Oldwolf soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Leiter soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Ziggy soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

134—Deekay-Oldwolf loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Deekay soils: 50 percent
Oldwolf soils: 30 percent
Minor components: 20 percent

Component Descriptions

Deekay soils

Landform: Hill, ridge
Hillslope position: Footslope, backslope
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:
A—0 to 4 inches; loam
Bt—4 to 24 inches; clay loam
Bk—24 to 60 inches; loam

Oldwolf soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.0 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; loam
Bt—3 to 21 inches; clay loam
Bk—21 to 32 inches; loam
Cr—32 to 60 inches; bedrock

Minor Components

Recluse soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ziggy soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Arwite soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ucross soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

135—Deekay-Oldwolf loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Deekay soils: 50 percent
Oldwolf soils: 30 percent
Minor components: 20 percent

Component Descriptions

Deekay soils

Landform: Hill, ridge
Hillslope position: Footslope, backslope
Parent material: Alluvium derived from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)

Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; loam
Bt—4 to 24 inches; clay loam
Bk—24 to 60 inches; loam

Oldwolf soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.0 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; loam
Bt—3 to 21 inches; clay loam
Bk—21 to 32 inches; loam
Cr—32 to 60 inches; bedrock

Minor Components

Arwite soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ziggy soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 6 to 15 percent

Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ucross soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Fairburn soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

136—Deekay-Ziggy loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Deekay soils: 50 percent
Ziggy soils: 30 percent
Minor components: 20 percent

Component Descriptions

Deekay soils
Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)

Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 4 inches; loam
Bt—4 to 24 inches; clay loam
Bk—24 to 60 inches; loam

Ziggy soils
Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.4 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; loam
Bw—5 to 14 inches; loam
Bk—14 to 60 inches; clay loam

Minor Components

Jaywest soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Oshoto soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Recluse soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Oldwolf soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

137—Echeta clay loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Echeta soils: 85 percent
Minor components: 15 percent

Component Descriptions

Echeta soils

Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 9.0 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 3e

Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 3 inches; clay loam
Bw—3 to 15 inches; clay
Bk—15 to 60 inches; clay

Minor Components

Moorhead soils
Composition: About 9 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Cromack soils
Composition: About 6 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

138—Echeta-Cromack clay loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Echeta soils: 45 percent
Cromack soils: 35 percent
Minor components: 20 percent

Component Descriptions

Echeta soils
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from calcareous shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 9.0 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet

Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; clay loam
Bw—3 to 15 inches; clay
Bk—15 to 60 inches; clay

Cromack soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 4.6 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 6 inches; clay loam
Bw—6 to 14 inches; clay
Bk—14 to 29 inches; clay
Cr—29 to 60 inches; bedrock

Minor Components

Ucross soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Samsil soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Moorhead soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Leiter soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

144—Forkwood loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Forkwood soils: 80 percent
Minor components: 20 percent

Component Descriptions

Forkwood soils
Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low

Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 2 inches; loam
Bt—2 to 23 inches; clay loam
Bk—23 to 60 inches; loam

Minor Components

Wyotite soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Hillslope position: Footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Recluse soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Bidman soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Zigweid soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

146—Forkwood-Cushman loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Forkwood soils: 50 percent
Cushman soils: 30 percent
Minor components: 20 percent

Component Descriptions

Forkwood soils

Landform: Ridge, hill
Hillslope position: Footslope, backslope
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 2 inches; loam
Bt—2 to 23 inches; clay loam
Bk—23 to 60 inches; loam

Cushman soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)

Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 2 inches; loam
Bt—2 to 23 inches; clay loam
Bk—23 to 30 inches; loam
Cr—30 to 60 inches; bedrock

Minor Components

Zigweid soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Theedle soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Hiland soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Bowbac soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

147—Forkwood-Cushman loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Forkwood soils: 50 percent
Cushman soils: 30 percent
Minor components: 20 percent

Component Descriptions

Forkwood soils

Landform: Ridge, hill
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 2 inches; loam
Bt—2 to 23 inches; clay loam
Bk—23 to 60 inches; loam

Cushman soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)

Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 2 inches; loam
Bt—2 to 23 inches; clay loam
Bk—23 to 30 inches; loam
Cr—30 to 60 inches; bedrock

Minor Components

Hiland soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Zigweid soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Theedle soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Shingle soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

148—Forkwood-Ulm loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Forkwood soils: 50 percent
Ulm soils: 35 percent
Minor components: 15 percent

Component Descriptions

Forkwood soils

Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

A—0 to 2 inches; loam
Bt—2 to 23 inches; clay loam
Bk—23 to 60 inches; loam

Ulm soils

Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)

Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 2 inches; loam
Bt—2 to 22 inches; clay
Bk—22 to 60 inches; clay loam

Minor Components

Wyotite soils
Composition: About 4 percent
Landform: Alluvial fan, fan remnant
Hillslope position: Footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Bidman soils
Composition: About 4 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Zigweid soils
Composition: About 4 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Felix soils
Composition: About 3 percent
Landform: Depression, playa
Slope: 0 to 2 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

149—Forkwood-Ulm loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Forkwood soils: 55 percent
Ulm soils: 30 percent
Minor components: 15 percent

Component Descriptions

Forkwood soils

Landform: Ridge, hill
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 2 inches; loam
Bt—2 to 23 inches; clay loam
Bk—23 to 60 inches; loam

Ulm soils

Landform: Hill, ridge
Hillslope position: Footslope, backslope
Parent material: Alluvium derived from calcareous shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:
A—0 to 2 inches; loam
Bt—2 to 22 inches; clay
Bk—22 to 60 inches; clay loam

Minor Components

Cushman soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Zigweid soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Renohill soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

151—Haverdad loam, 0 to 3 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,000 feet (1,067 to 1,524 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Haverdad soils: 80 percent
Minor components: 20 percent

Component Descriptions

Haverdad soils
Landform: Flood plain on valley, stream terrace on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 8.9 inches (moderate)

Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 5 mmhos/cm (slightly saline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Lowland (10-14np)
Potential native vegetation: green needlegrass, cottonwood, needleandthread, slender wheatgrass, western wheatgrass, Sandberg bluegrass, silver sagebrush, snowberry
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; loam
C—4 to 60 inches; stratified fine sandy loam to loam

Minor Components

Clarkelen soils
Composition: About 5 percent
Landform: Stream terrace, flood plain
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Draknab soils
Composition: About 5 percent
Landform: Stream terrace, flood plain
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Excessively drained

Boruff soils
Composition: About 5 percent
Landform: Flood plain on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

Kishona soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

155—Heldt-Bidman complex, saline, 0 to 3 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,000 feet (1,067 to 1,524 meters)
Mean annual precipitation: 10 to 17 inches (254 to 432 millimeters)

Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Heldt soils: 45 percent
Bidman soils: 35 percent
Minor components: 20 percent

Component Descriptions

Heldt soils

Landform: Stream terrace, fan remnant
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 7.2 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodicity maximum: About 13 SAR (moderately sodic)
Ecological site: Saline Upland (10-14np)
Potential native vegetation: gardner saltbush, inland saltgrass, Indian ricegrass, alkali sacaton, bottlebrush squirreltail, greasewood, western wheatgrass
Land capability (irrigated): 4s
Land capability (nonirrigated): 4s

Typical Profile:

A—0 to 2 inches; clay loam
Bny—2 to 22 inches; clay
Bkny—22 to 60 inches; clay

Bidman soils

Landform: Stream terrace, fan remnant
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)

Sodicity maximum: About 13 SAR (moderately sodic)
Ecological site: Saline Lowland (10-14np)
Potential native vegetation: alkali sacaton, greasewood, western wheatgrass, Nuttall's alkaligrass, bottlebrush squirreltail, inland saltgrass, Sandberg bluegrass
Land capability (irrigated): 4s
Land capability (nonirrigated): 4s
Typical Profile:
E—0 to 4 inches; loam
Btn—4 to 13 inches; clay
Bkny—13 to 60 inches; clay loam

Minor Components

Felix soils
Composition: About 5 percent
Landform: Depression, playa
Slope: 0 to 2 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

Arvada soils
Composition: About 5 percent
Landform: Fan remnant, stream terrace
Slope: 0 to 3 percent
Depth to restrictive feature: 4 to 22 inches to highly alkaline layers
Drainage class: Well drained

Slickspots
Composition: About 5 percent
Landform: Fan remnant, stream terrace
Slope: 0 to 3 percent
Depth to restrictive feature: 0 inches to highly alkaline layers
Drainage class: Well drained

Keyner soils
Composition: About 5 percent
Landform: Fan remnant, stream terrace
Slope: 0 to 3 percent
Depth to restrictive feature: 11 to 32 inches to highly alkaline layers
Drainage class: Well drained

162—Lismas-Mittenbutte, cool-Sabatka complex, 6 to 40 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Lismas soils: 30 percent
Mittenbutte soils: 30 percent
Sabatka soils: 20 percent
Minor components: 20 percent

Component Descriptions

Lismas soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from acid shale
Slope: 6 to 40 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.00 in/hr (very slow)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 10.5 LEP (very high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: About 2 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (nonsodic)
Ecological site: Shallow Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, bluebunch wheatgrass, big sagebrush, blue grama
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 3 inches; clay loam
Cy—3 to 16 inches; clay
Cr—16 to 60 inches; bedrock

Mittenbutte soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from sandstone
Slope: 6 to 40 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium

Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, bluebunch wheatgrass, little bluestem, blue grama, threadleaf sedge
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 4 inches; fine sandy loam
C—4 to 18 inches; fine sandy loam
Cr—18 to 60 inches; bedrock

Sabatka soils
Landform: Hill, ridge
Hillslope position: Summit, backslope
Parent material: Alluvium over residuum weathered from acid shale
Slope: 6 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 4.6 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: About 2 percent
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (nonsodic)
Ecological site: Dense Clay (15-17np)
Potential native vegetation: western wheatgrass, green needlegrass, Sandberg bluegrass, big sagebrush, birdfoot sagebrush
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e
Typical Profile:
A—0 to 3 inches; clay loam
Bw—3 to 19 inches; clay
C—19 to 30 inches; clay
Cr—30 to 60 inches; bedrock

Minor Components

Ucross soils
Composition: About 8 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Badland

Composition: About 7 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 40 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Xema soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

164—Lismas-Sabatka-Badland complex, 3 to 45 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Lismas soils: 35 percent
Sabatka soils: 30 percent
Badland: 10 percent
Minor components: 25 percent

Component Descriptions

Lismas soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from acid shale
Slope: 3 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.00 in/hr (very slow)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 10.5 LEP (very high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: About 2 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (nonsodic)

Ecological site: Shallow Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, bluebunch wheatgrass, big sagebrush, blue grama
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 3 inches; clay loam
Cy—3 to 16 inches; clay
Cr—16 to 60 inches; bedrock

Sabatka soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from acid shale
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 4.6 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: About 2 percent
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (nonsodic)
Ecological site: Dense Clay (10-14np)
Potential native vegetation: western wheatgrass, green needlegrass, Sandberg bluegrass, big sagebrush, birdfoot sagebrush
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e
Typical Profile:
A—0 to 3 inches; clay loam
Bw—3 to 19 inches; clay
C—19 to 30 inches; clay
Cr—30 to 60 inches; bedrock

Badland
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from sandstone and shale
Slope: 10 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified

Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8
Typical Profile:
Cr—0 to 60 inches; bedrock

Minor Components

Cromack soils
Composition: About 7 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder, backslope
Slope: 3 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Mittenbutte soils
Composition: About 7 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 45 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Ironbutte soils
Composition: About 6 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 45 percent
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Well drained

Fairburn soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 45 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

166—Jaywest loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Jaywest soils: 80 percent
Minor components: 20 percent

Component Descriptions

Jaywest soils

Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.2 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

E—0 to 7 inches; loam
Bt—7 to 36 inches; clay
Bk—36 to 60 inches; clay loam

Minor Components

Deekay soils

Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Moorhead soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Platmak soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent

Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Oshoto soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

167—Jaywest-Moorhead loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Jaywest soils: 40 percent
Moorhead soils: 40 percent
Minor components: 20 percent

Component Descriptions

Jaywest soils
Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.2 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
E—0 to 7 inches; loam
Bt—7 to 36 inches; clay
Bk—36 to 60 inches; clay loam

Moorhead soils

Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.20 in/hr (moderately slow)
Available water capacity: About 11.4 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

A—0 to 5 inches; loam
Bt—5 to 35 inches; clay loam
Bk—35 to 60 inches; clay loam

Minor Components

Deekay soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Leiter soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Spottedhorse soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Platmak soils
- Composition: About 5 percent
- Landform: Alluvial fan, fan remnant
- Slope: 0 to 6 percent
- Depth to restrictive feature: More than 60 inches
- Drainage class: Well drained

168—Jaywest-Spottedhorse loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Jaywest soils: 50 percent
Spottedhorse soils: 30 percent
Minor components: 20 percent

Component Descriptions

Jaywest soils
- Landform: Ridge, hill
- Hillslope position: Footslope, backslope
- Parent material: Alluvium derived from calcareous shale
- Slope: 0 to 6 percent
- Surface fragments: Unspecified
- Depth to restrictive feature: More than 60 inches
- Drainage class: Well drained
- Slowest permeability: About 0.06 in/hr (slow)
- Available water capacity: About 10.2 inches (high)
- Shrink-swell potential: About 7.5 LEP (high)
- Flooding hazard: None
- Ponding hazard: None
- Seasonal water table minimum depth: Greater than 6 feet
- Runoff class: Low
- Calcium carbonate maximum: About 15 percent
- Gypsum maximum: About 1 percent
- Salinity maximum: About 2 mmhos/cm (nonsaline)
- Sodicity maximum: About 3 SAR (nonsodic)
- Ecological site: Loamy (15-17np)
- Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
- Land capability (irrigated): 3e
- Land capability (nonirrigated): 3e
- **Typical Profile:**
- E—0 to 7 inches; loam
- Bt—7 to 36 inches; clay
- Bk—36 to 60 inches; clay loam

Spottedhorse soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

E—0 to 4 inches; loam
Bt—4 to 27 inches; clay
Bk—27 to 35 inches; clay loam
Cr—35 to 60 inches; bedrock

Minor Components

Deekay soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Footslope, backslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Oldwolf soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Moorhead soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Footslope, backslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Cromack soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

170—Keeline-Tullock loamy sands, 6 to 30 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Keeline soils: 40 percent
Tullock soils: 40 percent
Minor components: 20 percent

Component Descriptions

Keeline soils
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 6 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 6.8 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, western wheatgrass, blue grama, silver sagebrush, threadleaf sedge
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 6 inches; loamy sand
C—6 to 60 inches; fine sandy loam

Tullock soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or eolian deposits over residuum weathered from calcareous sandstone
Slope: 6 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Excessively drained
Slowest permeability: About 6.00 in/hr (rapid)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sands (10-14np)
Potential native vegetation: prairie sandreed, sand bluestem, needleandthread, Indian ricegrass, silver sagebrush, threadleaf sedge
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e
Typical Profile:
A—0 to 4 inches; loamy sand
C—4 to 28 inches; loamy sand
Cr—28 to 60 inches; bedrock

Minor Components

Orpha soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 20 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Excessively drained

Terro soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Taluce soils

Composition: About 4 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Blowouts
Composition: About 3 percent
Landform: Unspecified
Slope: 6 to 30 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Unspecified

Vonalee soils
Composition: About 3 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

174—Brislawn-Rockybutte-Ironbutte complex, 0 to 10 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Brislawn soils: 30 percent
Rockybutte soils: 30 percent
Ironbutte soils: 20 percent
Minor components: 20 percent

Component Descriptions

Brislawn soils
Landform: Plateau, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium and/or eolian deposits over residuum weathered from porcelanite
Slope: 0 to 10 percent
Surface fragments: About 2 percent angular channers
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 5.9 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)

Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
E—0 to 6 inches; loam
Bt—6 to 21 inches; clay
2Btk—21 to 31 inches; channery clay loam
2Bk—31 to 37 inches; very channery clay loam
3C—37 to 60 inches; fragmental material

Rockybutte soils
Landform: Ridge, plateau
Hillslope position: Shoulder, summit
Parent material: Alluvium and/or eolian deposits over residuum weathered from porcelanite
Slope: 0 to 10 percent
Surface fragments: About 2 percent angular channers
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 5.5 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; loam
Bt—5 to 23 inches; clay loam
2Bk—23 to 38 inches; extremely channery loam
3C—38 to 60 inches; fragmental material

Ironbutte soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium and/or colluvium derived from porcelanite
Slope: 0 to 10 percent
Surface fragments: About 2 percent angular channers
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification

Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 1.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 3 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, blue grama, green needlegrass, little bluestem, needleandthread, big sagebrush
Land capability (irrigated): 7s
Land capability (nonirrigated): 7s

Typical Profile:

A—0 to 4 inches; channery loam
C—4 to 12 inches; very channery loam
2C—12 to 60 inches; fragmental material

Minor Components

Spottedhorse soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 0 to 10 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Oldwolf soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 0 to 10 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Muleherder soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, backslope
Slope: 0 to 10 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Well drained

Xema soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 0 to 10 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

176—Leiter-Cromack clay loams, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Leiter soils: 50 percent
Cromack soils: 30 percent
Minor components: 20 percent

Component Descriptions

Leiter soils
Landform: Ridge, hill
Hillslope position: Summit, backslope
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; clay loam
Bt—3 to 22 inches; clay
Bk—22 to 33 inches; clay loam
Cr—33 to 60 inches; bedrock

Cromack soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 4.6 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 6 inches; clay loam
Bw—6 to 14 inches; clay
Bk—14 to 29 inches; clay
Cr—29 to 60 inches; bedrock

Minor Components

Moorhead soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ucross soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Samsil soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Fairburn soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

181—Moorhead clay loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Moorhead soils: 80 percent
Minor components: 20 percent

Component Descriptions

Moorhead soils

Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.8 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 4 inches; clay loam
Bt—4 to 24 inches; clay
Bk—24 to 60 inches; clay loam

Minor Components

Deekay soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Felix soils

Composition: About 5 percent
Landform: Depression, playa

Slope: 0 to 2 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

Echeta soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Nuncho soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

182—Moorhead loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Moorhead soils: 85 percent
Minor components: 15 percent

Component Descriptions

Moorhead soils
Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.20 in/hr (moderately slow)
Available water capacity: About 11.5 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)

Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 3 inches; loam
Bt—3 to 25 inches; clay loam
Bk—25 to 60 inches; clay loam

Minor Components

Deekay soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Felix soils
Composition: About 5 percent
Landform: Playa, depression
Slope: 0 to 2 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

Platmak soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

183—Moorhead-Leiter clay loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Moorhead soils: 50 percent
Leiter soils: 30 percent
Minor components: 20 percent

Component Descriptions

Moorhead soils
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Parent material: Alluvium derived from calcareous shale

Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.8 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 4 inches; clay loam
Bt—4 to 24 inches; clay
Bk—24 to 60 inches; clay loam

Leiter soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; clay loam
Bt—3 to 22 inches; clay
Bk—22 to 33 inches; clay loam
Cr—33 to 60 inches; bedrock

Minor Components

Jaywest soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Spottedhorse soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Cromack soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Deekay soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

184—Moorhead-Leiter clay loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Moorhead soils: 45 percent
Leiter soils: 35 percent
Minor components: 20 percent

Component Descriptions

Moorhead soils
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from calcareous shale

Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.8 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; clay loam
Bt—4 to 24 inches; clay
Bk—24 to 60 inches; clay loam

Leiter soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; clay loam
Bt—3 to 22 inches; clay
Bk—22 to 33 inches; clay loam
Cr—33 to 60 inches; bedrock

Minor Components

Cromack soils
- Composition: About 5 percent
- Landform: Hill, ridge
- Hillslope position: Shoulder, summit
- Slope: 6 to 15 percent
- Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
- Drainage class: Well drained

Jaywest soils
- Composition: About 5 percent
- Landform: Hill, ridge
- Hillslope position: Backslope, footslope
- Slope: 6 to 15 percent
- Depth to restrictive feature: More than 60 inches
- Drainage class: Well drained

Spottedhorse soils
- Composition: About 5 percent
- Landform: Hill, ridge
- Hillslope position: Shoulder, summit
- Slope: 6 to 15 percent
- Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
- Drainage class: Well drained

Ucross soils
- Composition: About 5 percent
- Landform: Hill, ridge
- Hillslope position: Summit, shoulder
- Slope: 6 to 15 percent
- Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
- Drainage class: Well drained

185—Moskee fine sandy loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,000 feet (1,067 to 1,524 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Moskee soils: 85 percent
Minor components: 15 percent

Component Descriptions

Moskee soils
- Landform: Fan remnant, alluvial fan
- Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone

Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 8.5 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 9 inches; fine sandy loam
Bt—9 to 32 inches; sandy clay loam
Bk—32 to 60 inches; fine sandy loam

Minor Components

Arwite soils
Composition: About 3 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Recluse soils
Composition: About 3 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Decolney soils
Composition: About 3 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Hiland soils
Composition: About 3 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Julesburg soils

Composition: About 3 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

187—Nuncho loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Nuncho soils: 80 percent
Minor components: 20 percent

Component Descriptions

Nuncho soils

Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 12 inches; loam
Bt—12 to 30 inches; clay
Bk—30 to 60 inches; clay loam

Minor Components

Moorhead soils
Composition: About 4 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Deekay soils
Composition: About 4 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Recluse soils
Composition: About 4 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Forkwood soils
Composition: About 4 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ulm soils
Composition: About 4 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

191—Pits-Dumps complex

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: ---
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: ---

Map Unit Composition

Pits: 60 percent
Dumps: 40 percent

Component Descriptions

Pits
Landform: Unspecified
Parent material: Unspecified

Slope: Unspecified
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: Unspecified
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8

Dumps
Landform: Unspecified
Parent material: Unspecified
Slope: Unspecified
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: Unspecified
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8

192—Platmak loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,000 feet (1,067 to 1,524 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Platmak soils: 80 percent
Minor components: 20 percent

Component Descriptions

Platmak soils

Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.5 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

E—0 to 4 inches; loam
Bt—4 to 27 inches; clay
Bk—27 to 60 inches; clay loam

Minor Components

Recluse soils

Composition: About 4 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Jaywest soils

Composition: About 4 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Bidman soils

Composition: About 4 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent

Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Felix soils
Composition: About 4 percent
Landform: Depression, playa
Slope: 0 to 2 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

Nuncho soils
Composition: About 4 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

198—Recluse loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,000 feet (1,067 to 1,524 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Recluse soils: 80 percent
Minor components: 20 percent

Component Descriptions

Recluse soils
Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.9 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass

Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 5 inches; loam
Bt—5 to 23 inches; clay loam
Bk—23 to 60 inches; loam

Minor Components

Platmak soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Moskee soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Forkwood soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Deekay soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

203—Rockypoint-Iwait association, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Rockypoint soils: 45 percent
Iwait soils: 35 percent
Minor components: 20 percent

Component Descriptions

Rockypoint soils
Landform: Stream terrace on valley, flood plain on valley

Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Lowland (15-17np)
Potential native vegetation: green needlegrass, bearded wheatgrass, cottonwood, slender wheatgrass, western wheatgrass, Sandberg bluegrass, needleandthread, silver sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; loam
C—3 to 60 inches; stratified fine sandy loam to loam

Iwait soils

Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.6 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 6 inches; loam
Bk—6 to 60 inches; clay loam

Minor Components

Sodawells soils
Composition: About 8 percent
Landform: Flood plain on valley, stream terrace on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Boruff soils
Composition: About 8 percent
Landform: Flood plain on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

Ashollow soils
Composition: About 4 percent
Landform: Alluvial fan, fan remnant
Slope: 3 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

204—Samday-Samday,cool-Shingle clay loams, 6 to 40 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Samday soils: 30 percent
Samday soils: 25 percent
Shingle soils: 20 percent
Minor components: 25 percent

Component Descriptions

Samday soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from calcareous shale
Slope: 6 to 40 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None

Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, bluebunch wheatgrass, big sagebrush, blue grama
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 2 inches; clay loam
C—2 to 16 inches; clay
Cr—16 to 60 inches; bedrock

Samday soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from calcareous shale
Slope: 6 to 40 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 1.5 inches (very low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Very Shallow (10-14np)
Potential native vegetation: bluebunch wheatgrass, Cusick's bluegrass, Rocky Mountain juniper, little bluestem, needleandthread, western wheatgrass
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 1 inch; clay loam
C—1 inch to 10 inches; clay
Cr—10 to 60 inches; bedrock

Shingle soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 6 to 40 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)

Available water capacity: About 3.2 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (10-14np)
Potential native vegetation: western wheatgrass, bluebunch wheatgrass, blue grama, little bluestem, needleandthread, threadleaf sedge, big sagebrush, green needlegrass
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Typical Profile:

A—0 to 3 inches; clay loam
C—3 to 16 inches; clay loam
Cr—16 to 60 inches; bedrock

Minor Components

Cushman soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Theedle soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Badland

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 40 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Wibaux soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 40 percent
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Well drained

Savageton soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

206—Samday-Shingle-Badland complex, 10 to 45 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,800 feet (1,067 to 1,768 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Samday soils: 35 percent
Shingle soils: 30 percent
Badland: 15 percent
Minor components: 20 percent

Component Descriptions

Samday soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from calcareous shale
Slope: 10 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, bluebunch wheatgrass, big sagebrush, blue grama
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Typical Profile:
A—0 to 2 inches; clay loam
C—2 to 16 inches; clay
Cr—16 to 60 inches; bedrock

Shingle soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from sandstone and shale
Slope: 10 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (10-14np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, blue grama, little bluestem, needleandthread, threadleaf sedge, big sagebrush, green needlegrass
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 2 inches; loam
C—2 to 12 inches; loam
Cr—12 to 60 inches; bedrock

Badland
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 10 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified

Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8
Typical Profile:
Cr—0 to 60 inches; bedrock

Minor Components

Hilight soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 10 to 45 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Wags soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 10 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Theedle soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 10 to 45 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Kishona soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 10 to 20 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

207—Cromack-Fairburn-Ucross complex, 3 to 20 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Cromack soils: 30 percent
Fairburn soils: 30 percent

Ucross soils: 25 percent
Minor components: 15 percent

Component Descriptions

Cromack soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 3 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 4.6 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big sagebrush, big bluestem, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 6 inches; clay loam
Bw—6 to 14 inches; clay
Bk—14 to 29 inches; clay
Cr—29 to 60 inches; bedrock

Fairburn soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from sandstone and shale
Slope: 3 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (15-17np)

Potential native vegetation: bluebunch wheatgrass, western wheatgrass, green needlegrass, needleandthread, big sagebrush, blue grama, little bluestem
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 4 inches; loam
C—4 to 15 inches; loam
Cr—15 to 60 inches; bedrock

Ucross soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.1 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; loam
Bk—5 to 31 inches; clay loam
Cr—31 to 60 inches; bedrock

Minor Components

Iwait soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 3 to 20 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Badland
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 20 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Samsil soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 20 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

210—Shingle-Taluce complex, 3 to 30 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Shingle soils: 40 percent
Taluce soils: 40 percent
Minor components: 20 percent

Component Descriptions

Shingle soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (10-14np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, blue grama, little bluestem, needleandthread, threadleaf sedge, big sagebrush, green needlegrass
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 2 inches; loam
C—2 to 12 inches; loam
Cr—12 to 60 inches; bedrock

Taluce soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from calcareous sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, bluebunch wheatgrass, little bluestem, blue grama, threadleaf sedge
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Typical Profile:

A—0 to 2 inches; fine sandy loam
C—2 to 18 inches; fine sandy loam
Cr—18 to 60 inches; bedrock

Minor Components

Badland

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Theedle soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Turnercrest soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Terro soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

215—Theedle-Kishona loams, 6 to 20 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Theedle soils: 45 percent
Kishona soils: 30 percent
Minor components: 25 percent

Component Descriptions

Theedle soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 6 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 5.5 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e
Typical Profile:
A—0 to 2 inches; loam
Bk—2 to 28 inches; clay loam
Cr—28 to 60 inches; bedrock

Kishona soils

Landform: Ridge, hill
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 6 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 4 inches; loam
Bk—4 to 60 inches; clay loam

Minor Components

Cushman soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Zigweid soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 6 to 20 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Savageton soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Silhouette soils

Composition: About 5 percent

Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Shingle soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 20 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

216—Theedle-Kishona-Shingle loams, 3 to 30 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Theedle soils: 40 percent
Kishona soils: 20 percent
Shingle soils: 20 percent
Minor components: 20 percent

Component Descriptions

Theedle soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 5.5 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Loamy (10-14np)

Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e
Typical Profile:
A—0 to 2 inches; loam
Bk—2 to 28 inches; clay loam
Cr—28 to 60 inches; bedrock

Kishona soils
Landform: Fan remnant, ridge, hill
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 3 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; loam
Bk—4 to 60 inches; clay loam

Shingle soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)

Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (10-14np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, blue grama, little bluestem, needleandthread, threadleaf sedge, big sagebrush, green needlegrass
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 2 inches; loam
C—2 to 12 inches; loam
Cr—12 to 60 inches; bedrock

Minor Components

Hilight soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Cambria soils
Composition: About 5 percent
Landform: Ridge, hill, fan remnant
Hillslope position: Footslope, backslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Turnercrest soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Taluce soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

217—Theedle-Shingle loams, 3 to 30 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Theedle soils: 50 percent
Shingle soils: 30 percent
Minor components: 20 percent

Component Descriptions

Theedle soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 5.5 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass, big sagebrush, Cusick's bluegrass
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e

Typical Profile:

A—0 to 2 inches; loam
Bk—2 to 28 inches; clay loam
Cr—28 to 60 inches; bedrock

Shingle soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)

Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (10-14np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, blue grama, little bluestem, needleandthread, threadleaf sedge, big sagebrush, green needlegrass
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 2 inches; loam
C—2 to 12 inches; loam
Cr—12 to 60 inches; bedrock

Minor Components

Keeline soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 3 to 20 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Kishona soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 3 to 20 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Badland
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 10 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Samday soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

219—Torriarents-Torriorthents complex, reclaimed

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,000 feet (1,067 to 1,524 meters)
Mean annual precipitation: 10 to 17 inches (254 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Torriarents soils: 50 percent
Torriorthents soils: 50 percent

Component Descriptions

Torriarents soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Mine spoil or earthy fill derived from sandstone and shale
Slope: 2 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: Unspecified
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e

Typical Profile:

A—0 to 4 inches; variable
C—4 to 60 inches; variable

Torriorthents soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Mine spoil or earthy fill derived from sandstone and shale
Slope: 2 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: Unspecified
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 6e

Land capability (nonirrigated): 6e
Typical Profile:
A—0 to 5 inches; variable
C—5 to 60 inches; variable

220—Pitchdraw-Ashollow-Niobrara complex, 3 to 30 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Pitchdraw soils: 35 percent
Ashollow soils: 25 percent
Niobrara soils: 20 percent
Minor components: 20 percent

Component Descriptions

Pitchdraw soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or eolian deposits over residuum weathered from calcareous sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 4.4 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e
Typical Profile:
A—0 to 4 inches; fine sandy loam
Bk—4 to 31 inches; fine sandy loam
Cr—31 to 60 inches; bedrock

Ashollow soils

Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 3 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; fine sandy loam
C—5 to 60 inches; fine sandy loam

Niobrara soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Excessively drained
Slowest permeability: About 6.00 in/hr (rapid)
Available water capacity: About 0.7 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 1 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, bluebunch wheatgrass, little bluestem, Indian ricegrass, western wheatgrass
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 3 inches; loamy sand

C—3 to 12 inches; sand
Cr—12 to 60 inches; bedrock

Minor Components

Badland
Composition: About 4 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Elwop soils
Composition: About 4 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Vonalf soils
Composition: About 4 percent
Landform: Alluvial fan, hill
Hillslope position: Footslope, backslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Xema soils
Composition: About 4 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Mittenbutte soils
Composition: About 4 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

221—Turnercrest-Keeline-Taluce fine sandy loams, 6 to 30 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Turnercrest soils: 35 percent
Keeline soils: 30 percent
Taluce soils: 15 percent
Minor components: 20 percent

Component Descriptions

Turnercrest soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium and/or eolian deposits over residuum weathered from calcareous sandstone
Slope: 6 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 4.5 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, little bluestem, western wheatgrass, silver sagebrush, threadleaf sedge
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e

Typical Profile:

A—0 to 2 inches; fine sandy loam
Bk—2 to 32 inches; fine sandy loam
Cr—32 to 60 inches; bedrock

Keeline soils

Landform: Ridge, hill
Hillslope position: Footslope, backslope
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent

Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, little bluestem, western wheatgrass, silver sagebrush, threadleaf sedge
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; fine sandy loam
C—4 to 60 inches; fine sandy loam

Taluce soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous sandstone
Slope: 6 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, bluebunch wheatgrass, little bluestem, blue grama, threadleaf sedge
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 2 inches; fine sandy loam
C—2 to 14 inches; fine sandy loam
Cr—14 to 60 inches; bedrock

Minor Components

Vonalee soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Terro soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 30 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Bowbac soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Tullock soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Excessively drained

223—Ucross loam, 1 to 9 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ucross soils: 80 percent
Minor components: 20 percent

Component Descriptions

Ucross soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 1 to 9 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.1 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)

Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; loam
Bk—5 to 31 inches; clay loam
Cr—31 to 60 inches; bedrock

Minor Components

Cromack soils
Composition: About 7 percent
Landform: Hill, ridge
Hillslope position: Backslope, summit, shoulder
Slope: 1 to 9 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Fairburn soils
Composition: About 7 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 9 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Iwait soils
Composition: About 6 percent
Landform: Ridge, hill
Hillslope position: Footslope
Slope: 1 to 9 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

224—Ucross-Iwait loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ucross soils: 50 percent
Iwait soils: 30 percent
Minor components: 20 percent

Component Descriptions

Ucross soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.1 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; loam
Bk—5 to 31 inches; clay loam
Cr—31 to 60 inches; bedrock

Iwait soils

Landform: Hill, ridge, fan remnant
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.6 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass

Land capability (irrigated): 3e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 6 inches; loam
Bk—6 to 60 inches; clay loam

Minor Components

Cromack soils
Composition: About 7 percent
Landform: Ridge, hill
Hillslope position: Summit, backslope, shoulder
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Ziggy soils
Composition: About 7 percent
Landform: Fan remnant, hill, ridge
Hillslope position: Backslope, footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Oldwolf soils
Composition: About 6 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

225—Ucross-Iwait-Fairburn loams, 3 to 30 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ucross soils: 35 percent
Iwait soils: 25 percent
Fairburn soils: 20 percent
Minor components: 20 percent

Component Descriptions

Ucross soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 30 percent
Surface fragments: Unspecified

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.1 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e
Typical Profile:
A—0 to 5 inches; loam
Bk—5 to 31 inches; clay loam
Cr—31 to 60 inches; bedrock

Iwait soils
Landform: Hill, fan remnant, ridge
Hillslope position: Footslope, backslope
Parent material: Alluvium derived from sandstone and shale
Slope: 3 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.6 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 6 inches; loam
Bk—6 to 60 inches; clay loam

Fairburn soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from sandstone and shale
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, green needlegrass, needleandthread, big sagebrush, blue grama, little bluestem
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Typical Profile:

A—0 to 4 inches; loam
C—4 to 15 inches; loam
Cr—15 to 60 inches; bedrock

Minor Components

Elwop soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Cromack soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope, summit, shoulder
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Deekay soils

Composition: About 5 percent
Landform: Fan remnant, hill, ridge
Hillslope position: Footslope, backslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Pitchdraw soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

228—Ulm-Renohill clay loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,000 feet (1,067 to 1,524 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ulm soils: 45 percent
Renohill soils: 40 percent
Minor components: 15 percent

Component Descriptions

Ulm soils

Landform: Ridge, hill
Hillslope position: Footslope, backslope
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, Cusick's bluegrass, big sagebrush, blue grama
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 4 inches; clay loam
Bt—4 to 25 inches; clay
Bk—25 to 60 inches; clay loam

Renohill soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 6.0 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, Cusick's bluegrass, big sagebrush, blue grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 4 inches; clay loam
Bt—4 to 24 inches; clay
Bk—24 to 35 inches; clay loam
Cr—35 to 60 inches; bedrock

Minor Components

Bidman soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Parmleed soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Savageton soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 0 to 6 percent
Depth to restrictive feature: inches to bedrock (paralithic)
Drainage class: Well drained

229—Ulm-Renohill clay loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,000 feet (1,067 to 1,524 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ulm soils: 45 percent
Renohill soils: 35 percent
Minor components: 20 percent

Component Descriptions

Ulm soils

Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from calcareous shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, Cusick's bluegrass, big sagebrush, blue grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; clay loam
Bt—4 to 25 inches; clay
Bk—25 to 60 inches; clay loam

Renohill soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 6.0 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, Cusick's bluegrass, big sagebrush, blue grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:
A—0 to 4 inches; clay loam
Bt—4 to 24 inches; clay
Bk—24 to 35 inches; clay loam
Cr—35 to 60 inches; bedrock

Minor Components

Worfka soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Bidman soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Parmleed soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Savageton soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: inches to bedrock (paralithic)
Drainage class: Well drained

233—Ustic Torriorthents, gullied

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 17 inches (254 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ustic Torriorthents soils: 75 percent
Minor components: 25 percent

Component Descriptions

Ustic Torriorthents soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium and/or residuum weathered from sandstone and shale
Slope: 10 to 80 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 60 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.0 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 4 inches; loam
Bk—4 to 35 inches; clay loam
Cr—35 to 60 inches; bedrock

Minor Components

Turnercrest soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 10 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Shingle soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 10 to 60 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Kishona soils
Composition: About 5 percent
Landform: Fan remnant, ridge, hill
Hillslope position: Footslope, backslope
Slope: 10 to 20 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Haverdad soils
Composition: About 5 percent
Landform: Stream terrace on valley
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Gullies
Composition: About 5 percent
Landform: Unspecified
Slope: 10 to 80 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Unspecified

234—Ustic Torriorthents-Badland complex, 10 to 100 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 17 inches (254 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ustic Torriorthents soils: 65 percent
Badland: 20 percent
Minor components: 15 percent

Component Descriptions

Ustic Torriorthents soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium and/or residuum weathered from sandstone and shale
Slope: 10 to 80 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 60 inches to bedrock (paralithic)

Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.0 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 4 inches; loam
Bk—4 to 35 inches; clay loam
Cr—35 to 60 inches; bedrock

Badland
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 10 to 100 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8
Typical Profile:
Cr—0 to 60 inches; bedrock

Minor Components

Shingle soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 10 to 60 percent

Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Taluce soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 10 to 60 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Samday soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 10 to 60 percent
Depth to restrictive feature: inches to bedrock (paralithic)
Drainage class: Well drained

236—Vonalee-Terro fine sandy loams, 2 to 10 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 5,200 feet (1,067 to 1,585 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Vonalee soils: 50 percent
Terro soils: 30 percent
Minor components: 20 percent

Component Descriptions

Vonalee soils
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 2 to 10 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent

Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, western wheatgrass, blue grama, silver sagebrush, threadleaf sedge
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; fine sandy loam
Bt—3 to 24 inches; fine sandy loam
Bk—24 to 60 inches; fine sandy loam

Terro soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous sandstone
Slope: 2 to 10 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 4.2 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, western wheatgrass, blue grama, silver sagebrush, threadleaf sedge
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; fine sandy loam
Bt—3 to 16 inches; fine sandy loam
Bk—16 to 30 inches; fine sandy loam
Cr—30 to 60 inches; bedrock

Minor Components

Tullock soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 2 to 10 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Excessively drained

Orpha soils
- Composition: About 5 percent
- Landform: Hill, ridge
- Hillslope position: Summit, shoulder
- Slope: 2 to 10 percent
- Depth to restrictive feature: More than 60 inches
- Drainage class: Excessively drained

Taluce soils
- Composition: About 5 percent
- Landform: Ridge, hill
- Hillslope position: Shoulder, summit
- Slope: 3 to 10 percent
- Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
- Drainage class: Well drained

Bowbac soils
- Composition: About 5 percent
- Landform: Hill, ridge
- Hillslope position: Summit, shoulder
- Slope: 2 to 10 percent
- Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
- Drainage class: Well drained

238—Vonalf-Xema fine sandy loams, 3 to 10 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Vonalf soils: 50 percent
Xema soils: 30 percent
Minor components: 20 percent

Component Descriptions

Vonalf soils
- Landform: Ridge, hill
- Hillslope position: Backslope, footslope
- Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
- Slope: 3 to 10 percent
- Surface fragments: Unspecified
- Depth to restrictive feature: More than 60 inches
- Drainage class: Well drained
- Slowest permeability: About 2.00 in/hr (moderately rapid)
- Available water capacity: About 8.3 inches (moderate)
- Shrink-swell potential: About 1.5 LEP (low)
- Flooding hazard: None

Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 6 inches; fine sandy loam
Bt—6 to 34 inches; fine sandy loam
Bk—34 to 60 inches; fine sandy loam

Xema soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or eolian deposits over residuum weathered from calcareous sandstone
Slope: 3 to 10 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 4.4 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; fine sandy loam
Bt—4 to 22 inches; fine sandy loam
Bk—22 to 31 inches; fine sandy loam
Cr—31 to 60 inches; bedrock

Minor Components

Ashollow soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope

Slope: 3 to 10 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Mittenbutte soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 10 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Julesburg soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 3 to 10 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Arwite soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Footslope, backslope
Slope: 3 to 10 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

239—Ironbutte-Fairburn-Mittenbutte complex, 6 to 40 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ironbutte soils: 30 percent
Fairburn soils: 25 percent
Mittenbutte soils: 25 percent
Minor components: 20 percent

Component Descriptions

Ironbutte soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium and/or colluvium derived from porcelanite
Slope: 6 to 40 percent
Surface fragments: About 2 percent angular channers
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification

Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 1.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 3 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, blue grama, green needlegrass, little bluestem, needleandthread, big sagebrush
Land capability (irrigated): 7s
Land capability (nonirrigated): 7s
Typical Profile:
A—0 to 4 inches; channery loam
C—4 to 12 inches; very channery loam
2C—12 to 60 inches; fragmental material

Fairburn soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from sandstone and shale
Slope: 6 to 40 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, green needlegrass, needleandthread, blue grama, little bluestem, big sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 4 inches; loam
C—4 to 15 inches; loam
Cr—15 to 60 inches; bedrock

Mittenbutte soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from calcareous sandstone

Slope: 6 to 40 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.3 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, bluebunch wheatgrass, little bluestem, Indian ricegrass, western wheatgrass
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 3 inches; fine sandy loam
C—3 to 16 inches; fine sandy loam
Cr—16 to 60 inches; bedrock

Minor Components

Badland
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 40 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Ucross soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 40 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Pitchdraw soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, backslope
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Samsil soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder

Slope: 6 to 40 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

241—Ironbutte-Ironbutte, thin solum channery loams, 6 to 40 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ironbutte soils: 55 percent
Ironbutte soils: 30 percent
Minor components: 15 percent

Component Descriptions

Ironbutte soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium and/or colluvium derived from porcelanite
Slope: 6 to 40 percent
Surface fragments: About 2 percent angular channers
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 1.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 3 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, blue grama, green needlegrass, little bluestem, needleandthread, big sagebrush
Land capability (irrigated): 7s
Land capability (nonirrigated): 7s
Typical Profile:
A—0 to 4 inches; channery loam
C—4 to 12 inches; very channery loam
2C—12 to 60 inches; fragmental material

Ironbutte soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or colluvium derived from porcelanite
Slope: 6 to 40 percent
Surface fragments: About 2 percent angular channers
Depth to restrictive feature: 6 to 10 inches to strongly contrasting textural stratification
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 1.3 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 3 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Very Shallow (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, blue grama, green needlegrass, little bluestem, needleandthread, big sagebrush
Land capability (irrigated): 7s
Land capability (nonirrigated): 7s

Typical Profile:

A—0 to 2 inches; channery loam
C—2 to 10 inches; very channery loam
2C—10 to 60 inches; fragmental material

Minor Components

Badland

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 40 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Muleherder soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, backslope
Slope: 6 to 40 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Well drained

Rockybutte soils

Composition: About 5 percent
Landform: Ridge
Hillslope position: Summit, shoulder
Slope: 0 to 10 percent

Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Well drained

244—Muleherder-Ironbutte channery loams, 3 to 40 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Muleherder soils: 45 percent
Ironbutte soils: 40 percent
Minor components: 15 percent

Component Descriptions

Muleherder soils
Landform: Ridge, hill
Hillslope position: Backslope, summit
Parent material: Alluvium and/or colluvium derived from porcelanite
Slope: 3 to 40 percent
Surface fragments: About 2 percent angular channers, about 2 percent subrounded stones
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 3.4 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (slightly sodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s
Typical Profile:
A—0 to 2 inches; channery loam
Bw—2 to 16 inches; channery loam
BCk—16 to 33 inches; extremely channery fine sandy loam
2C—33 to 60 inches; fragmental material

Ironbutte soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium and/or colluvium derived from porcelanite
Slope: 3 to 40 percent
Surface fragments: About 2 percent angular channers, about 2 percent subrounded stones
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 1.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 3 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, blue grama, green needlegrass, little bluestem, needleandthread, big sagebrush
Land capability (irrigated): 7s
Land capability (nonirrigated): 7s

Typical Profile:

A—0 to 4 inches; channery loam
C—4 to 12 inches; very channery loam
2C—12 to 60 inches; fragmental material

Minor Components

Brislawn soils

Composition: About 5 percent
Landform: Ridge
Hillslope position: Summit, shoulder
Slope: 0 to 10 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Well drained

Rockybutte soils

Composition: About 5 percent
Landform: Ridge
Hillslope position: Summit, shoulder
Slope: 0 to 10 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Well drained

Badland

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 10 to 40 percent

Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

248—Ziggy-Iwait loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ziggy soils: 50 percent
Iwait soils: 30 percent
Minor components: 20 percent

Component Descriptions

Ziggy soils
Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.4 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; loam
Bw—5 to 14 inches; loam
Bk—14 to 60 inches; clay loam

Iwait soils
Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent

Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.6 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 6 inches; loam
Bk—6 to 60 inches; clay loam

Minor Components

Oldwolf soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Recluse soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Jaywest soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Oshoto soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

249—Ziggy-Iwait loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ziggy soils: 50 percent
Iwait soils: 30 percent
Minor components: 20 percent

Component Descriptions

Ziggy soils
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.4 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; loam
Bw—5 to 14 inches; loam
Bk—14 to 60 inches; clay loam

Iwait soils
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.6 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e

Typical Profile:
A—0 to 6 inches; loam
Bk—6 to 60 inches; clay loam

Minor Components

Deekay soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Oldwolf soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Pitchdraw soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, backslope
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Ucross soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

250—Ziggy-Ucross-Oldwolf loams, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ziggy soils: 35 percent
Ucross soils: 30 percent
Oldwolf soils: 20 percent
Minor components: 15 percent

Component Descriptions

Ziggy soils

Landform: Fan remnant, hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 3 to 10 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.4 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 5 inches; loam
Bw—5 to 14 inches; loam
Bk—14 to 60 inches; clay loam

Ucross soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)

Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.1 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; loam
Bk—5 to 31 inches; clay loam
Cr—31 to 60 inches; bedrock

Oldwolf soils
Landform: Ridge, hill
Hillslope position: Summit, backslope
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.0 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, needleandthread, big bluestem, big sagebrush, blue grama, Sandberg bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; loam
Bt—3 to 21 inches; clay loam
Bk—21 to 32 inches; loam
Cr—32 to 60 inches; bedrock

Minor Components

Deekay soils
Composition: About 5 percent
Landform: Ridge, hill, fan remnant
Hillslope position: Footslope, backslope
Slope: 3 to 10 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Fairburn soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Cromack soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder, backslope
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

251—Water

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: ---
Mean annual precipitation: ---
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: ---

Map Unit Composition

Water: 100 percent

Component Descriptions

Water
Landform: Unspecified
Parent material: Unspecified
Slope: Unspecified
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: Unspecified
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified

Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): Unspecified
Land capability (nonirrigated): Unspecified

252—Absted-Slickspots complex, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 17 inches (254 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Absted soils: 45 percent
Slickspots soils: 35 percent
Minor components: 20 percent

Component Descriptions

Absted soils
Landform: Fan remnant, alluvial fan, stream terrace
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 6 to 24 inches to highly alkaline layers
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 6.9 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodicity maximum: About 30 SAR (strongly sodic)
Ecological site: Loamy (10-14 Np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s
Typical Profile:
E—0 to 2 inches; fine sandy loam
Bt—2 to 8 inches; clay
Btkny—8 to 13 inches; clay
Bkny—13 to 60 inches; clay loam

Slickspots

Landform: Fan remnant, alluvial fan, stream terrace
Parent material: Unspecified
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to highly alkaline layers
Drainage class: Well drained
Slowest permeability: About 0.00 in/hr (very slow)
Available water capacity: About 5.9 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Negligible
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 20 mmhos/cm (strongly saline)
Sodicity maximum: About 45 SAR (strongly sodic)
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8

Minor Components

Arvada soils

Composition: About 8 percent
Landform: Fan remnant, stream terrace, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: 4 to 22 inches to highly alkaline layers
Drainage class: Well drained

Ulm soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant, stream terrace
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Wyarno soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant, stream terrace
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Absted soils, gravelly substatum

Composition: About 2 percent
Landform: Alluvial fan, fan remnant, stream terrace
Slope: 0 to 6 percent
Depth to restrictive feature: 6 to 24 inches to highly alkaline layers
Drainage class: Well drained

253—Absted-Arvada-Slickspots complex, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Arvada soils: 30 percent
Absted soils: 30 percent
Slickspots: 20 percent
Minor components: 15 percent

Component Descriptions

Absted soils

Landform: Fan remnant, alluvial fan, stream terrace
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 6 to 24 inches to highly alkaline layers
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 7.1 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodicity maximum: About 30 SAR (strongly sodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, green needlegrass, blue grama, big sagebrush, greasewood
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s

Typical Profile:

E—0 to 2 inches; fine sandy loam
Bt—2 to 8 inches; clay
Btkny—8 to 13 inches; clay
Bkny—13 to 60 inches; clay loam

Arvada soils

Landform: Alluvial fan, stream terrace, fan remnant
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 4 to 22 inches to highly alkaline layers

Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 7.3 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodicity maximum: About 30 SAR (strongly sodic)
Ecological site: Saline Upland (10-14np)
Potential native vegetation: gardner saltbush, inland saltgrass, Indian ricegrass, alkali sacaton, western wheatgrass, greasewood
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s
Typical Profile:
E—0 to 4 inches; fine sandy loam
Btn—4 to 14 inches; clay
Btkn—14 to 20 inches; clay loam
Bkny—20 to 60 inches; clay loam

Slickspots
Landform: Alluvial fan, fan remnant, stream terrace
Parent material: Unspecified
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to highly alkaline layers
Drainage class: Well drained
Slowest permeability: About 0.00 in/hr (very slow)
Available water capacity: About 5.9 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Negligible
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 20 mmhos/cm (strongly saline)
Sodicity maximum: About 45 SAR (strongly sodic)
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8

Minor Components

Keyner soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant, stream terrace
Slope: 0 to 6 percent
Depth to restrictive feature: 11 to 32 inches to highly alkaline layers
Drainage class: Well drained

Bidman soils

Composition: About 5 percent
Landform: Alluvial fan, stream terrace, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Silhouette soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

254—Badland-Lismas complex, 15 to 75 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Badland: 50 percent
Lismas soils: 35 percent
Minor components: 15 percent

Component Descriptions

Badland

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from acid shale
Slope: 15 to 75 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8

Typical Profile:
Cr—0 to 60 inches; bedrock

Lismas soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from acid shale
Slope: 15 to 75 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.00 in/hr (very slow)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 10.5 LEP (very high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: About 2 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big sagebrush, bluebunch wheatgrass, blue grama
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 3 inches; clay loam
Cy—3 to 16 inches; clay
Cr—16 to 60 inches; bedrock

Minor Components

Fairburn soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 15 to 60 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Sabatka soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder, backslope
Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Ironbutte soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 15 to 75 percent

Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Well drained

255—Bidman-Parmleed loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Bidman soils: 45 percent
Parmleed soils: 35 percent
Minor components: 20 percent

Component Descriptions

Bidman soils
Landform: Hill, ridge
Hillslope position: Toeslope, footslope
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.8 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, green needlegrass, blue grama, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
E—0 to 3 inches; loam
Bt—3 to 21 inches; clay
Bk—21 to 60 inches; clay loam

Parmleed soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous shale

Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 6.2 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, green needlegrass, blue grama, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:
E—0 to 4 inches; loam
Bt—4 to 26 inches; clay
Bk—26 to 37 inches; clay loam
Cr—37 to 60 inches; bedrock

Minor Components

Worfka soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 0 to 6 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Renohill soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Platmak soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Toeslope, footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Forkwood soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, toeslope

Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

256—Bidman-Ulm complex, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Bidman soils: 55 percent
Ulm soils: 35 percent
Minor components: 10 percent

Component Descriptions

Bidman soils
Landform: Stream terrace, fan remnant, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.20 in/hr (moderately slow)
Available water capacity: About 9.9 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 14 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14 Np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e
Typical Profile:
E—0 to 4 inches; fine sandy loam
Bt—4 to 14 inches; clay loam
Bt—14 to 26 inches; clay loam
Bk—26 to 60 inches; clay loam

Ulm soils
Landform: Alluvial fan, fan remnant, stream terrace
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified

Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.20 in/hr (moderately slow)
Available water capacity: About 11.2 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14 Np)
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e

Typical Profile:
A—0 to 3 inches; loam
Bt—3 to 19 inches; clay loam
Bk—19 to 60 inches; clay loam

Minor Components

Absted soils
Composition: About 5 percent
Landform: Stream terrace, fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: 4 to 22 inches to highly alkaline layers
Drainage class: Well drained

Wyarno soils
Composition: About 5 percent
Landform: Stream terrace, alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

257—Bonfri, deep-Bonfri fine sandy loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Bonfri soils: 50 percent
Bonfri soils: 30 percent
Minor components: 20 percent

Component Descriptions

Bonfri soils

Landform: Ridge, hill
Hillslope position: Footslope
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 50 to 60 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 8.4 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 6 inches; fine sandy loam
Bt—6 to 19 inches; sandy clay loam
Bk1—19 to 34 inches; sandy clay loam
Bk2—34 to 58 inches; fine sandy loam
Cr—58 to 60 inches; bedrock

Bonfri soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous sandstone
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 4.2 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass

Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; fine sandy loam
Bt—4 to 19 inches; sandy clay loam
Bk—19 to 29 inches; fine sandy loam
Cr—29 to 60 inches; bedrock

Minor Components

Toby soils
Composition: About 6 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Twilight soils
Composition: About 6 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 2 to 6 percent
Depth to restrictive feature: inches to bedrock (paralithic)
Drainage class: Well drained

Foreleft soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Blacksheep soils
Composition: About 3 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 2 to 6 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

258—Bonfri-Kirby complex, 0 to 10 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Bonfri soils: 50 percent
Kirby soils: 35 percent
Minor components: 15 percent

Component Descriptions

Bonfri soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 0 to 10 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.0 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 4 inches; loam
Bt—4 to 22 inches; clay loam
Bk—22 to 32 inches; loam
Cr—32 to 60 inches; bedrock

Kirby soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or colluvium over residuum weathered from porcelanite
Slope: 2 to 10 percent
Surface fragments: About 2 percent angular channers
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Excessively drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.2 inches (very low)
Shrink-swell potential: About 0.0 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Loamy (15-17np)

Potential native vegetation: bluebunch wheatgrass, western wheatgrass, needleandthread, blue grama, green needlegrass, little bluestem, big sagebrush
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s
Typical Profile:
A—0 to 4 inches; channery loam
Bk—4 to 17 inches; very channery loam
2C—17 to 60 inches; fragmental material

Minor Components

Cabbart soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 2 to 10 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Pylon soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 0 to 10 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Blacksheep soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 2 to 10 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

259—Bonfri-Twilight-Blacksheep fine sandy loams, wooded, 3 to 30 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Bonfri soils: 40 percent
Twilight soils: 30 percent
Blacksheep soils: 15 percent
Minor components: 15 percent

Component Descriptions

Bonfri soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous sandstone
Slope: 3 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 4.2 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; fine sandy loam
Bt—5 to 20 inches; sandy clay loam
Bk—20 to 30 inches; fine sandy loam
Cr—30 to 60 inches; bedrock

Twilight soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 3.9 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 4 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland

Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; fine sandy loam
Bw—5 to 20 inches; fine sandy loam
Bk—20 to 29 inches; fine sandy loam
Cr—29 to 60 inches; bedrock

Blacksheep soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 4 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; fine sandy loam
Bk—4 to 16 inches; fine sandy loam
Cr—16 to 60 inches; bedrock

Minor Components

Bonfri soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Footslope
Slope: 3 to 20 percent
Depth to restrictive feature: 50 to 60 inches to bedrock (paralithic)
Drainage class: Well drained

Toby soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Footslope, backslope
Slope: 3 to 15 percent

Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Cabbart soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

260—Cabbart-Volborg-Badland complex, wooded, 3 to 60 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Cabbart soils: 40 percent
Volborg soils: 30 percent
Badland: 15 percent
Minor components: 15 percent

Component Descriptions

Cabbart soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 60 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; loam
Bk—4 to 16 inches; loam
Cr—16 to 60 inches; bedrock

Volborg soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from acid shale
Slope: 3 to 60 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 2.3 inches (very low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very high
Calcium carbonate maximum: None
Gypsum maximum: About 2 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 3 inches; clay loam
Cy—3 to 16 inches; clay
Cr—16 to 60 inches; bedrock

Badland
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from sandstone and shale
Slope: 3 to 60 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified

Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8
Typical Profile:
Cr—0 to 60 inches; bedrock

Minor Components

Bonfri soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Yawdim soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 60 percent
Depth to restrictive feature: 16 inches to bedrock (paralithic)
Drainage class: Well drained

Delpoint soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 45 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

261—Cabbart-Yawdim-Badland complex, 6 to 45 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Cabbart soils: 35 percent
Yawdim soils: 30 percent
Badland: 15 percent
Minor components: 20 percent

Component Descriptions

Cabbart soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit

Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 6 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, green needlegrass, needleandthread, big sagebrush, blue grama, little bluestem
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 3 inches; loam
Bk—3 to 15 inches; loam
Cr—15 to 60 inches; bedrock

Yawdim soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 6 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big sagebrush, bluebunch wheatgrass, blue grama
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 3 inches; clay loam
C—3 to 16 inches; clay
Cr—16 to 60 inches; bedrock

Badland

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 6 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8s
Land capability (nonirrigated): 8s

Typical Profile:

Cr—0 to 60 inches; bedrock

Minor Components

Bonfri soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Delpoint soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 45 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Yamacall soils

Composition: About 5 percent
Landform: Fan remnant, hill, ridge
Hillslope position: Backslope
Slope: 6 to 20 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Blacksheep soils

Composition: About 5 percent
Landform: Hill, ridge

Hillslope position: Summit, shoulder
Slope: 6 to 45 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

262—Cambria-Kishona-Zigweid loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Cambria soils: 30 percent
Kishona soils: 30 percent
Zigweid soils: 25 percent
Minor components: 15 percent

Component Descriptions

Cambria soils
Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.2 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, green needlegrass, blue grama, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 2 inches; loam
Bt—2 to 8 inches; clay loam
Bk—8 to 60 inches; loam

Kishona soils

Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, green needlegrass, blue grama, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 4 inches; loam
Bk—4 to 60 inches; clay loam

Zigweid soils

Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, green needlegrass, blue grama, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 4 inches; loam
Bw—4 to 17 inches; clay loam
Bk—17 to 60 inches; clay loam

Minor Components

Wyotite soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Hillslope position: Footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Bidman soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Theedle soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

263—Cedar Butte-Slickspots complex, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Cedar Butte soils: 65 percent
Slickspots: 20 percent
Minor components: 15 percent

Component Descriptions

Cedar Butte soils
Landform: Fan remnant, alluvial fan, stream terrace
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: None within 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 7.6 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None

Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodicity maximum: About 30 SAR (strongly sodic)
Ecological site: Saline Upland (15-17np)
Potential native vegetation: western wheatgrass, inland saltgrass, alkali sacaton, blue grama, gardner saltbush, Indian ricegrass, greasewood
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s
Typical Profile:
E—0 to 7 inches; very fine sandy loam
Btn—7 to 15 inches; silty clay loam
Btkny—15 to 26 inches; silty clay
Bkny—26 to 60 inches; silty clay loam

Slickspots
Landform: Alluvial fan, fan remnant, stream terrace
Parent material: Unspecified
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to highly alkaline layers
Drainage class: Well drained
Slowest permeability: About 0.00 in/hr (very slow)
Available water capacity: About 5.9 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Negligible
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 20 mmhos/cm (strongly saline)
Sodicity maximum: About 45 SAR (strongly sodic)
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8

Minor Components

Keyner soils
Composition: About 5 percent
Landform: Stream terrace, alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: 11 to 32 inches to highly alkaline layers
Drainage class: Well drained

Echeta soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Jaywest soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan, stream terrace
Slope: 0 to 6 percent
Depth to restrictive feature: 9 to 27 inches to highly alkaline layers
Drainage class: Well drained

264—Clarkelen-Draknab fine sandy loams, 0 to 3 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Clarkelen soils: 50 percent
Draknab soils: 40 percent
Minor components: 10 percent

Component Descriptions

Clarkelen soils
Landform: Flood plain on valley, stream terrace on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (slightly sodic)
Ecological site: Lowland (10-14np)
Potential native vegetation: green needlegrass, cottonwood, needleandthread, slender wheatgrass, western wheatgrass, Sandberg bluegrass, silver sagebrush, snowberry
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; fine sandy loam
C—5 to 60 inches; stratified loamy fine sand to loam

Draknab soils

Landform: Flood plain on valley, stream terrace on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Excessively drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 5.6 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Lowland (10-14np)
Potential native vegetation: green needlegrass, cottonwood, needleandthread, slender wheatgrass, western wheatgrass, Sandberg bluegrass, silver sagebrush, snowberry
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 5 inches; fine sandy loam
C—5 to 60 inches; stratified fine sand to fine sandy loam

Minor Components

Haverdad soils

Composition: About 5 percent
Landform: Stream terrace on valley, flood plain on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Boruff soils

Composition: About 5 percent
Landform: Flood plain on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

265—Clarkelen-Draknab-Boruff complex, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Clarkelen soils: 45 percent
Draknab soils: 35 percent
Boruff soils: 15 percent
Minor components: 5 percent

Component Descriptions

Clarkelen soils

Landform: Stream terrace, flood plain
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (slightly sodic)
Ecological site: Lowland (10-14np)
Potential native vegetation: green needlegrass, cottonwood, needleandthread, slender wheatgrass, western wheatgrass, Sandberg bluegrass, silver sagebrush, snowberry
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 5 inches; fine sandy loam
C—5 to 60 inches; stratified loamy fine sand to loam

Draknab soils

Landform: Flood plain, stream terrace
Parent material: Alluvium
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Excessively drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 5.6 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent

Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Lowland (10-14np)
Potential native vegetation: green needlegrass, cottonwood, needleandthread, slender wheatgrass, western wheatgrass, Sandberg bluegrass, silver sagebrush, snowberry
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; fine sandy loam
C—5 to 60 inches; stratified fine sand to fine sandy loam

Boruff soils
Landform: Flood plain on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 9.4 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: About 3 inches
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodicity maximum: About 10 SAR (slightly sodic)
Ecological site: Subirrigated (10-14np)
Potential native vegetation: Nebraska sedge, western wheatgrass, basin wildrye, slender wheatgrass
Land capability (irrigated): 5w
Land capability (nonirrigated): 5w
Typical Profile:
A—0 to 2 inches; silty clay
Cy—2 to 60 inches; stratified fine sandy loam to silty clay

Minor Components

Haverdad soils
Composition: About 5 percent
Landform: Flood plain on valley, stream terrace on valley
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

266—Coaliams fine sandy loam, moderately saline, 0 to 3 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Coaliams soils: 90 percent
Minor components: 10 percent

Component Descriptions

Coaliams soils

Landform: Stream terrace on valley, flood plain on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 8.2 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Rare
Ponding hazard: None
Seasonal water table minimum depth: About 36 inches
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodicity maximum: About 10 SAR (slightly sodic)
Ecological site: Lowland (15-17np)
Potential native vegetation: western wheatgrass, big bluestem, green needlegrass, slender wheatgrass, Canada wildrye, silver sagebrush
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s
Typical Profile:
A—0 to 4 inches; loam
Byz—4 to 22 inches; clay loam
Bkyz—22 to 60 inches; stratified fine sandy loam to clay loam

Minor Components

Rockypoint soils

Composition: About 5 percent
Landform: Stream terrace on valley, flood plain on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Boruff soils
Composition: About 5 percent
Landform: Flood plain on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

267—Cromack-Samsil clay loams, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Cromack soils: 45 percent
Samsil soils: 35 percent
Minor components: 20 percent

Component Descriptions

Cromack soils
Landform: Hill, ridge
Hillslope position: Summit, backslope, shoulder
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 4.6 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 6 inches; clay loam
Bw—6 to 14 inches; clay
Bk—14 to 29 inches; clay
Cr—29 to 60 inches; bedrock

Samsil soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from calcareous shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 2.4 inches (very low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big sagebrush, bluebunch wheatgrass, blue grama
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Typical Profile:

A—0 to 4 inches; clay loam
C—4 to 16 inches; clay
Cr—16 to 60 inches; bedrock

Minor Components

Badland

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Fairburn soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Leiter soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Ucross soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

268—Decolney-Hiland fine sandy loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Decolney soils: 45 percent
Hiland soils: 40 percent
Minor components: 15 percent

Component Descriptions

Decolney soils

Landform: Fan remnant, alluvial fan
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 8.5 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 3 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, western wheatgrass, blue grama, silver sagebrush, threadleaf sedge
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:
A—0 to 3 inches; fine sandy loam
Bt—3 to 22 inches; sandy clay loam
C—22 to 60 inches; fine sandy loam

Hiland soils
Landform: Alluvial fan, fan remnant
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 8.5 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, western wheatgrass, blue grama, silver sagebrush, threadleaf sedge
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 3 inches; fine sandy loam
Bt—3 to 30 inches; sandy clay loam
Bk—30 to 60 inches; fine sandy loam

Minor Components

Bowbac soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Vonalee soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Moskee soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan

Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

269—Decolney-Hiland fine sandy loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Decolney soils: 40 percent
Hiland soils: 40 percent
Minor components: 20 percent

Component Descriptions

Decolney soils
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 8.5 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 3 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, western wheatgrass, blue grama, silver sagebrush, threadleaf sedge
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; fine sandy loam
Bt—3 to 22 inches; sandy clay loam
C—22 to 60 inches; fine sandy loam

Hiland soils

Landform: Ridge, hill
Hillslope position: Backslope, footslope
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 8.5 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, western wheatgrass, blue grama, silver sagebrush, threadleaf sedge
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 3 inches; fine sandy loam
Bt—3 to 30 inches; sandy clay loam
Bk—30 to 60 inches; fine sandy loam

Minor Components

Bowbac soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Moskee soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 6 to 10 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Taluce soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Vonalee soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

270—Deekay-Deekay, stratified substratum loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Deekay soils: 40 percent
Deekay soils: 40 percent
Minor components: 20 percent

Component Descriptions

Deekay soils

Landform: Fan remnant, alluvial fan
Parent material: Alluvium
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

A—0 to 4 inches; loam
Bt—4 to 24 inches; clay loam
Bk—24 to 60 inches; loam

Deekay soils

Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

E—0 to 5 inches; loam
Bt—5 to 25 inches; clay loam
2C—25 to 60 inches; stratified fine sandy loam to loam

Minor Components

Rockypoint soils

Composition: About 5 percent
Landform: Stream terrace on valley
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Vonalf soils

Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ziggy soils

Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Jaywest soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent

Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

271—Delpoint-Cabbart loams, 6 to 30 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Delpoint soils: 45 percent
Cabbart soils: 35 percent
Minor components: 20 percent

Component Descriptions

Delpoint soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 6 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.5 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; loam
Bw—4 to 17 inches; clay loam
Bk—17 to 33 inches; clay loam
Cr—33 to 60 inches; bedrock

Cabbart soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from sandstone and shale

Slope: 6 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, green needlegrass, needleandthread, big sagebrush, blue grama, little bluestem
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 3 inches; loam
Bk—3 to 15 inches; loam
Cr—15 to 60 inches; bedrock

Minor Components

Bonfri soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Blacksheep soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Megonot soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Yawdim soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder

Slope: 6 to 30 percent
Depth to restrictive feature: 16 inches to bedrock (paralithic)
Drainage class: Well drained

272—Delpoint-Yamacall-Cabbart loams, 3 to 30 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Delpoint soils: 35 percent
Yamacall soils: 25 percent
Cabbart soils: 20 percent
Minor components: 20 percent

Component Descriptions

Delpoint soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.5 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; loam
Bw—4 to 17 inches; clay loam
Bk—17 to 33 inches; clay loam
Cr—33 to 60 inches; bedrock

Yamacall soils

Landform: Fan remnant, hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 3 inches; loam
Bw—3 to 15 inches; loam
Bk—15 to 60 inches; loam

Cabbart soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, green needlegrass, needleandthread, big sagebrush, blue grama, little bluestem
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; loam
Bk—3 to 15 inches; loam
Cr—15 to 60 inches; bedrock

Minor Components

Foreleft soils
Composition: About 5 percent
Landform: Fan remnant, ridge, hill
Hillslope position: Backslope, footslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Bonfri soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Blacksheep soils
Composition: About 4 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Megonot soils
Composition: About 3 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Yawdim soils
Composition: About 3 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 30 percent
Depth to restrictive feature: 16 inches to bedrock (paralithic)
Drainage class: Well drained

273—Delpoint-Yamacall-Cabbart loams, wooded, 3 to 30 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)

Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Delpoint soils: 35 percent
Yamacall soils: 25 percent
Cabbart soils: 20 percent
Minor components: 20 percent

Component Descriptions

Delpoint soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.4 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; loam
Bw—5 to 18 inches; clay loam
Bk—18 to 34 inches; clay loam
Cr—34 to 60 inches; bedrock

Yamacall soils

Landform: Fan remnant, hill, ridge
Hillslope position: Backslope
Parent material: Alluvium derived from sandstone and shale
Slope: 3 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None

Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; loam
Bw—4 to 16 inches; loam
Bk—16 to 60 inches; loam

Cabbart soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; loam
Bk—4 to 16 inches; loam
Cr—16 to 60 inches; bedrock

Minor Components

Bonfri soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 20 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Twilight soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 30 percent
Depth to restrictive feature: inches to bedrock (paralithic)
Drainage class: Well drained

Blacksheep soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Foreleft soils
Composition: About 5 percent
Landform: Fan remnant, ridge, hill
Hillslope position: Backslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

274—Denied access

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to (1,067 to)
Mean annual precipitation: ---
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: ---

Map Unit Composition

Denied access: 100 percent

Component Descriptions

Denied access
Landform: Unspecified
Parent material: Unspecified
Slope: Unspecified
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: Unspecified
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet

Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): Unspecified
Land capability (nonirrigated): Unspecified

275—Echeta-Moorhead clay loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Echeta soils: 45 percent
Moorhead soils: 40 percent
Minor components: 15 percent

Component Descriptions

Echeta soils
Landform: Fan remnant, alluvial fan
Parent material: Loamy alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 9.0 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; clay loam
Bw—3 to 15 inches; clay
Bk—15 to 60 inches; clay

Moorhead soils

Landform: Alluvial fan, fan remnant
Parent material: Loamy alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.8 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

A—0 to 4 inches; clay loam
Bt—4 to 24 inches; clay
Bk—24 to 60 inches; clay loam

Minor Components

Ziggy soils

Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Jaywest soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Cromack soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder, backslope
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

276—Elwop-Mittenbutte-Rock outcrop complex, wooded, 3 to 60 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Elwop soils: 35 percent
Mittenbutte soils: 35 percent
Rock outcrop: 15 percent
Minor components: 15 percent

Component Descriptions

Elwop soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium and/or eolian deposits over residuum weathered from calcareous sandstone
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 4.9 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; fine sandy loam
Bt—5 to 25 inches; sandy clay loam
Bk—25 to 35 inches; fine sandy loam
Cr—35 to 60 inches; bedrock

Mittenbutte soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from calcareous sandstone
Slope: 3 to 60 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, silver sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Typical Profile:

Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; fine sandy loam
C—4 to 16 inches; fine sandy loam
Cr—16 to 60 inches; bedrock

Rock outcrop

Landform: Hill, ridge
Hillslope position: Shoulder
Parent material: Residuum weathered from calcareous sandstone
Slope: 3 to 60 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to bedrock (lithic)
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8s
Land capability (nonirrigated): 8s

Minor Components

Xema soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Deekay soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ucross soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 50 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

277—Fairburn-Mittenbutte-Badland complex, 3 to 60 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part (fig. 2)
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Fairburn soils: 40 percent
Mittenbutte soils: 25 percent
Badland: 15 percent
Minor components: 20 percent

Component Descriptions

Fairburn soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 3 to 60 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)

Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, green needlegrass, needleandthread, big sagebrush, blue grama, little bluestem
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Typical Profile:

A—0 to 4 inches; loam
C—4 to 15 inches; loam
Cr—15 to 60 inches; bedrock

Mittenbutte soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous sandstone
Slope: 3 to 60 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)

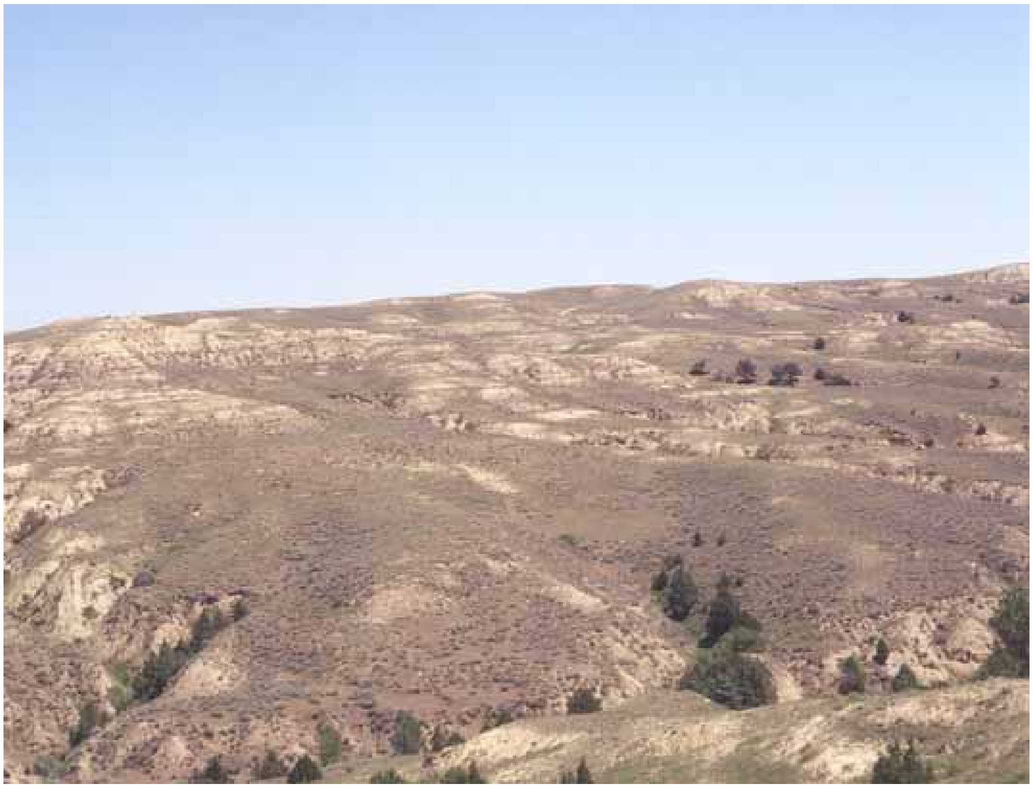


Figure 2. Typical area of Fairburn-Mittenbutte-Badland complex, 3 to 60 percent slopes.

Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.3 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, bluebunch wheatgrass, little bluestem, blue grama, threadleaf sedge
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 3 inches; fine sandy loam
C—3 to 16 inches; fine sandy loam
Cr—16 to 60 inches; bedrock

Badland
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 3 to 60 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8
Typical Profile:
Cr—0 to 60 inches; bedrock

Minor Components

Ucross soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit

Slope: 3 to 50 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Ironbutte soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 60 percent
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Well drained

Pitchdraw soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Klinedraw soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

278—Fairburn-Samsil-Badland complex, 10 to 45 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Fairburn soils: 35 percent
Samsil soils: 30 percent
Badland: 15 percent
Minor components: 20 percent

Component Descriptions

Fairburn soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 10 to 45 percent

Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, green needlegrass, needleandthread, big sagebrush, blue grama, little bluestem
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 4 inches; loam
C—4 to 15 inches; loam
Cr—15 to 60 inches; bedrock

Samsil soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from calcareous shale
Slope: 10 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 2.4 inches (very low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big sagebrush, bluebunch wheatgrass, blue grama
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 4 inches; clay loam
C—4 to 16 inches; clay
Cr—16 to 60 inches; bedrock

Badland

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 10 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8

Typical Profile:

Cr—0 to 60 inches; bedrock

Minor Components

Oldwolf soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 10 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Ucross soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 10 to 45 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Cromack soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder, backslope
Slope: 10 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Pitchdraw soils

Composition: About 5 percent
Landform: Ridge, hill

Hillslope position: Backslope, summit
Slope: 10 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

279—Fairburn-Samsil-Badland complex, wooded, 6 to 50 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Fairburn soils: 35 percent
Samsil soils: 30 percent
Badland: 15 percent
Minor components: 20 percent

Component Descriptions

Fairburn soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 6 to 50 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; loam
C—5 to 16 inches; loam
Cr—16 to 60 inches; bedrock

Samsil soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from calcareous shale
Slope: 6 to 50 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 2.3 inches (very low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Typical Profile:

Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; clay loam
C—5 to 16 inches; clay
Cr—16 to 60 inches; bedrock

Badland

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from sandstone and shale
Slope: 6 to 50 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8

Typical Profile:

Cr—0 to 60 inches; bedrock

Minor Components

Ucross soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 50 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Iwait soils
Composition: About 5 percent
Landform: Ridge, hill, fan remnant
Hillslope position: Backslope
Slope: 6 to 20 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Xema soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Cromack soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, shoulder, summit
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

280—Felix clay, 0 to 2 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 17 inches (254 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Felix soils: 85 percent
Minor components: 15 percent

Component Descriptions

Felix soils
Landform: Playa, depression
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 2 percent
Surface fragments: Unspecified

Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained
Slowest permeability: About 0.00 in/hr (very slow)
Available water capacity: About 8.4 inches (moderate)
Shrink-swell potential: About 10.5 LEP (very high)
Flooding hazard: None
Ponding hazard: Frequent
Seasonal water table minimum depth: About 3 inches
Runoff class: Negligible
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodicity maximum: About 10 SAR (slightly sodic)
Ecological site: Clayey Overflow (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, slender wheatgrass, silver sagebrush
Land capability (irrigated): 5w
Land capability (nonirrigated): 5w
Typical Profile:
A—0 to 5 inches; clay
Bss—5 to 30 inches; clay
By—30 to 50 inches; clay
Bky—50 to 60 inches; clay

Minor Components

Moorhead soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 2 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Jaywest soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Hillslope position: Footslope
Slope: 0 to 2 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ulm soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 2 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

281—Foreleft loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)

Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Foreleft soils: 80 percent
Minor components: 20 percent

Component Descriptions

Foreleft soils
Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 4 inches; loam
Bt—4 to 26 inches; clay loam
Bk—26 to 60 inches; loam

Minor Components

Pinehill soils
Composition: About 7 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Bonfri soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: 50 to 60 inches to bedrock (paralithic)
Drainage class: Well drained

Yamacall soils

Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Vanstel soils

Composition: About 3 percent
Landform: Fan remnant, alluvial fan
Hillslope position: Footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

282—Foreleft-Bonfri loams, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Foreleft soils: 50 percent
Bonfri soils: 30 percent
Minor components: 20 percent

Component Descriptions

Foreleft soils

Landform: Hill, ridge
Hillslope position: Footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush

Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 4 inches; loam
Bt—4 to 26 inches; clay loam
Bk—26 to 60 inches; loam

Bonfri soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.0 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; loam
Bt—4 to 22 inches; clay loam
Bk—22 to 32 inches; loam
Cr—32 to 60 inches; bedrock

Minor Components

Delpoint soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Bonfri soils
Composition: About 4 percent
Landform: Hill, ridge
Hillslope position: Footslope
Slope: 3 to 15 percent
Depth to restrictive feature: 50 to 60 inches to bedrock (paralithic)
Drainage class: Well drained

Yamacall soils
Composition: About 4 percent
Landform: Ridge, hill
Hillslope position: Footslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Pinehill soils
Composition: About 4 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Cabbart soils
Composition: About 3 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

283—Gateson-Xema-Mittenbutte fine sandy loams, wooded, 3 to 30 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Gateson soils: 40 percent
Xema soils: 25 percent
Mittenbutte soils: 20 percent
Minor components: 15 percent

Component Descriptions

Gateson soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium and/or eolian deposits over residuum weathered from sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 5.1 inches (low)

Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

Oi—0 to 1 inch; slightly decomposed plant material
E—1 inch to 4 inches; fine sandy loam
B/E—4 to 13 inches; stratified fine sandy loam to sandy clay loam
Bt—13 to 21 inches; sandy clay loam
C/B—21 to 37 inches; stratified fine sandy loam to sandy clay loam
Cr—37 to 60 inches; bedrock

Xema soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or eolian deposits over residuum weathered from sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 5.2 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

Oi—0 to 1 inch; slightly decomposed plant material
E—1 inch to 4 inches; fine sandy loam
E/B—4 to 17 inches; fine sandy loam
B/E—17 to 38 inches; stratified fine sandy loam to sandy clay loam
Cr—38 to 60 inches; bedrock

Mittenbutte soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 1.7 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, silver sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Typical Profile:

Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; fine sandy loam
C—4 to 13 inches; fine sandy loam
Cr—13 to 60 inches; bedrock

Minor Components

Arwite soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Spottedhorse soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Vonalf soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

284—Haverdad clay loam, 0 to 3 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Haverdad soils: 85 percent
Minor components: 15 percent

Component Descriptions

Haverdad soils

Landform: Flood plain on valley, stream terrace on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.8 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: Rare
Ponding hazard: None
Seasonal water table minimum depth: About 36 inches
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Lowland (10-14np)
Potential native vegetation: green needlegrass, cottonwood, needleandthread, slender wheatgrass, western wheatgrass, Sandberg bluegrass, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 5 inches; clay loam
C—5 to 60 inches; stratified fine sandy loam to clay loam

Minor Components

Boruff soils

Composition: About 5 percent
Landform: Flood plain on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

Kishona soils

Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Clarkelen soils

Composition: About 5 percent
Landform: Flood plain on valley, stream terrace on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

285—Haverdad-Boruff complex, 0 to 3 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Haverdad soils: 50 percent
Boruff soils: 40 percent
Minor components: 10 percent

Component Descriptions

Haverdad soils

Landform: Flood plain on valley, stream terrace on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Lowland (10-14np)
Potential native vegetation: green needlegrass, cottonwood, needleandthread, slender wheatgrass, western wheatgrass, Sandberg bluegrass, snowberry
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:
A—0 to 4 inches; loam
C—4 to 60 inches; stratified fine sandy loam to loam

Boruff soils
Landform: Flood plain on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 8.9 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: About 3 inches
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodicity maximum: About 13 SAR (moderately sodic)
Ecological site: Subirrigated (10-14np)
Potential native vegetation: Nebraska sedge, western wheatgrass, basin wildrye, bearded wheatgrass
Land capability (irrigated): 5w
Land capability (nonirrigated): 5w
Typical Profile:
A—0 to 2 inches; silty clay
Cy—2 to 60 inches; stratified fine sandy loam to silty clay

Minor Components

Kishona soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Clarkelen soils
Composition: About 5 percent
Landform: Stream terrace on valley, flood plain on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

286—Havre-Bigsandy loams, 0 to 3 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)

Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Havre soils: 50 percent
Bigsandy soils: 35 percent
Minor components: 15 percent

Component Descriptions

Havre soils

Landform: Stream terrace on valley, flood plain on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 9.5 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Lowland (15-17np)
Potential native vegetation: green needlegrass, bearded wheatgrass, cottonwood, slender wheatgrass, western wheatgrass, Sandberg bluegrass, needleandthread, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 6 inches; loam
C—6 to 60 inches; stratified fine sandy loam to clay loam

Bigsandy soils

Landform: Flood plain on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 9.5 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: About 3 inches
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)

Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Lowland (15-17np)
Potential native vegetation: Nebraska sedge, green needlegrass, western wheatgrass, basin wildrye, cottonwood, slender wheatgrass, Sandberg bluegrass, needleandthread, silver sagebrush
Land capability (irrigated): 5w
Land capability (nonirrigated): 5w
Typical Profile:
A—0 to 3 inches; loam
C1—3 to 10 inches; stratified loam to silty clay loam
Cg2—10 to 60 inches; stratified fine sandy loam to silty clay loam

Minor Components

Foreleft soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Vanstel soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Yamacall soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

287—Hiland-Bowbac association, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Hiland soils: 45 percent
Bowbac soils: 30 percent
Minor components: 25 percent

Component Descriptions

Hiland soils
Landform: Alluvial fan, hill, ridge
Hillslope position: Backslope, footslope

Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 7.9 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Sandy (10-14 Np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; fine sandy loam
Bt—4 to 30 inches; sandy clay loam
Bk—30 to 60 inches; sandy loam

Bowbac soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or eolian deposits over residuum weathered from calcareous sandstone
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 3.4 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Sandy (10-14 Np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; sandy loam
Bt—4 to 15 inches; sandy clay loam
Bk—15 to 24 inches; sandy loam
Cr—24 to 60 inches; bedrock

Minor Components

Decolney soils
- Composition: About 13 percent
- Landform: Alluvial fan, ridge, hill
- Hillslope position: Footslope, backslope
- Slope: 3 to 15 percent
- Depth to restrictive feature: More than 60 inches
- Drainage class: Well drained

Tullock soils
- Composition: About 12 percent
- Landform: Ridge, hill
- Hillslope position: Shoulder, summit
- Slope: 6 to 15 percent
- Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
- Drainage class: Excessively drained

288—Hiland-Bowbac fine sandy loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Hiland soils: 50 percent
Bowbac soils: 30 percent
Minor components: 20 percent

Component Descriptions

Hiland soils
- Landform: Hill, ridge
- Hillslope position: Footslope, backslope
- Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
- Slope: 0 to 6 percent
- Surface fragments: Unspecified
- Depth to restrictive feature: More than 60 inches
- Drainage class: Well drained
- Slowest permeability: About 0.60 in/hr (moderate)
- Available water capacity: About 8.5 inches (moderate)
- Shrink-swell potential: About 1.5 LEP (low)
- Flooding hazard: None
- Ponding hazard: None
- Seasonal water table minimum depth: Greater than 6 feet
- Runoff class: Very low
- Calcium carbonate maximum: About 5 percent
- Gypsum maximum: None

Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, western wheatgrass, blue grama, silver sagebrush, threadleaf sedge
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 3 inches; fine sandy loam
Bt—3 to 30 inches; sandy clay loam
Bk—30 to 60 inches; fine sandy loam

Bowbac soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or eolian deposits over residuum weathered from calcareous sandstone
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, western wheatgrass, blue grama, silver sagebrush, threadleaf sedge
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; fine sandy loam
Bt—3 to 31 inches; sandy clay loam
Bk—31 to 39 inches; fine sandy loam
Cr—39 to 60 inches; bedrock

Minor Components

Vonalee soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Terro soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Moskee soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Footslope, toeslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Cushman soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

289—Hiland-Bowbac fine sandy loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Hiland soils: 45 percent
Bowbac soils: 35 percent
Minor components: 20 percent

Component Descriptions

Hiland soils
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 8.5 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None

Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, western wheatgrass, blue grama, silver sagebrush, threadleaf sedge
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; fine sandy loam
Bt—3 to 30 inches; sandy clay loam
Bk—30 to 60 inches; fine sandy loam

Bowbac soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium and/or eolian deposits over residuum weathered from calcareous sandstone
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, western wheatgrass, blue grama, silver sagebrush, threadleaf sedge
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; fine sandy loam
Bt—3 to 31 inches; sandy clay loam
Bk—31 to 39 inches; fine sandy loam
Cr—39 to 60 inches; bedrock

Minor Components

Vonalee soils
Composition: About 5 percent
Landform: Ridge, hill

Hillslope position: Footslope, backslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Terro soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Taluce soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Moskee soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 6 to 10 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

290—Hiland-Decolney complex, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Hiland soils: 50 percent
Decolney soils: 35 percent
Minor components: 15 percent

Component Descriptions

Hiland soils
Landform: Hill, ridge, alluvial fan
Hillslope position: Footslope, backslope
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 7.8 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Sandy (10-14 Np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 2 inches; fine sandy loam
Bt—2 to 27 inches; sandy clay loam
Bk—27 to 60 inches; sandy loam

Decolney soils

Landform: Ridge, hill, alluvial fan
Hillslope position: Footslope, backslope
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 7.3 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 2 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Sandy (10-14 Np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 2 inches; loamy sand
Bt—2 to 11 inches; sandy clay loam
C—11 to 60 inches; sandy loam

Minor Components

Bowbac soils

Composition: About 4 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit

Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Tullock soils
Composition: About 4 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Excessively drained

Vonalee soils
Composition: About 4 percent
Landform: Alluvial fan, hill, ridge
Hillslope position: Footslope, backslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Somewhat excessively drained

Hiland soils
Composition: About 3 percent
Landform: Alluvial fan
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

291—Ironbutte-Fairburn-Mittenbutte complex, wooded, 3 to 60 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ironbutte soils: 35 percent
Fairburn soils: 30 percent
Mittenbutte soils: 15 percent
Minor components: 20 percent

Component Descriptions

Ironbutte soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder, backslope
Parent material: Alluvium and/or colluvium derived from porcelanite
Slope: 3 to 60 percent
Surface fragments: About 2 percent angular channers
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Well drained

Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 1.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Unspecified
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 3 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine ane Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; channery loam
C—5 to 13 inches; very channery loam
2C—13 to 60 inches; fragmental material

Fairburn soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 3 to 60 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, bluebunch wheatgrass, western wheatgrass, green needlegrass, needleandthread, big sagebrush, blue grama, little bluestem
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; loam
C—5 to 16 inches; loam
Cr—16 to 60 inches; bedrock

Mittenbutte soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous sandstone
Slope: 3 to 60 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, needleandthread, prairie sandreed, bluebunch wheatgrass, little bluestem, blue grama, threadleaf sedge
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Typical Profile:

Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; fine sandy loam
C—4 to 16 inches; fine sandy loam
Cr—16 to 60 inches; bedrock

Minor Components

Badland

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 60 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Elwop soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Ucross soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 50 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Xema soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

292—Jaywest-Jaywest, stratified substratum loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Jaywest soils: 45 percent
Jaywest soils: 40 percent
Minor components: 15 percent

Component Descriptions

Jaywest soils

Landform: Fan remnant, alluvial fan
Hillslope position: Footslope
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.2 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:
E—0 to 7 inches; loam
Bt—7 to 36 inches; clay
Bk—36 to 60 inches; clay loam

Jaywest soils
Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 9.7 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
E—0 to 4 inches; loam
Bt—4 to 23 inches; clay
2C—23 to 60 inches; stratified fine sandy loam to clay loam

Minor Components

Rockypoint soils
Composition: About 5 percent
Landform: Stream terrace
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Moorhead soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Deekay soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

293—Jaywest, saline substratum-Cedar Butte-Slickspots complex, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Jaywest soils: 40 percent
Cedarbutte soils: 30 percent
Slickspots: 15 percent
Minor components: 15 percent

Component Descriptions

Jaywest soils
Landform: Stream terrace, fan remnant, alluvial fan
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 9 to 27 inches to highly alkaline layers
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodicity maximum: About 30 SAR (strongly sodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, big sagebrush, cheatgrass, greasewood, silver sagebrush
Land capability (irrigated): 4s
Land capability (nonirrigated): 4s
Typical Profile:
E—0 to 7 inches; very fine sandy loam
Bt—7 to 15 inches; clay
Btkny—15 to 30 inches; clay
Bkny—30 to 60 inches; clay loam

Cedar Butte soils
Landform: Fan remnant, alluvial fan, stream terrace
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified

Depth to restrictive feature: None within 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 6.9 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodicity maximum: About 30 SAR (strongly sodic)
Ecological site: Saline Upland (15-17np)
Potential native vegetation: western wheatgrass, inland saltgrass, alkali sacaton, blue grama, gardner saltbush, Indian ricegrass, greasewood
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s
Typical Profile:
E—0 to 7 inches; very fine sandy loam
Btn—7 to 15 inches; silty clay loam
Btkny—15 to 26 inches; clay
Bkny—26 to 60 inches; silty clay loam

Slickspots
Landform: Fan remnant, stream terrace, alluvial fan
Parent material: Unspecified
Slope: 0 to 2 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to highly alkaline layers
Drainage class: Well drained
Slowest permeability: About 0.00 in/hr (very slow)
Salinity maximum: About 20 mmhos/cm (strongly saline)
Sodicity maximum: About 45 SAR (strongly sodic)
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8

Minor Components

Keyner soils
Composition: About 5 percent
Landform: Stream terrace, fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: 11 to 32 inches to highly alkaline layers
Drainage class: Well drained

Oshoto soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Arwite soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

294—Kirby-Cabbart-Blacksheep complex, wooded, 6 to 45 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Kirby soils: 40 percent
Cabbart soils: 25 percent
Blacksheep soils: 15 percent
Minor components: 20 percent

Component Descriptions

Kirby soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or colluvium derived from porcelanite
Slope: 6 to 45 percent
Surface fragments: About 2 percent angular channers
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Excessively drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.2 inches (very low)
Shrink-swell potential: About 0.0 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush, ponderosa pine
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; channery loam
Bk—5 to 18 inches; very channery loam
2C—18 to 60 inches; fragmental material

Cabbart soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 6 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; loam
Bk—4 to 16 inches; loam
Cr—16 to 60 inches; bedrock

Blacksheep soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous sandstone
Slope: 6 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 4 percent
Gypsum maximum: None

Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; fine sandy loam
Bk—4 to 16 inches; fine sandy loam
Cr—16 to 60 inches; bedrock

Minor Components

Bonfri soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Twilight soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 30 percent
Depth to restrictive feature: inches to bedrock (paralithic)
Drainage class: Well drained

Delpoint soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 45 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Yamacall soils
Composition: About 5 percent
Landform: Ridge, hill, fan remnant
Hillslope position: Footslope, backslope
Slope: 6 to 20 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

295—Lismas-Sabatka-Xema complex, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)

Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Lismas soils: 40 percent
Sabatka soils: 30 percent
Xema soils: 15 percent
Minor components: 15 percent

Component Descriptions

Lismas soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from acid shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.00 in/hr (very slow)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 10.5 LEP (very high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: About 2 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big sagebrush, bluebunch wheatgrass, blue grama
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Typical Profile:

A—0 to 3 inches; clay loam
Cy—3 to 16 inches; clay
Cr—16 to 60 inches; bedrock

Sabatka soils

Landform: Hill, ridge
Hillslope position: Backslope, summit, shoulder
Parent material: Alluvium over residuum weathered from acid shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 4.6 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet

Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: About 2 percent
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; clay loam
Bw—3 to 19 inches; clay
C—19 to 30 inches; clay
Cr—30 to 60 inches; bedrock

Xema soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or eolian deposits over residuum weathered from sandstone
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 4.6 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 3 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, little bluestem, Indian ricegrass, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; fine sandy loam
Bt—4 to 18 inches; fine sandy loam
C—18 to 33 inches; fine sandy loam
Cr—33 to 60 inches; bedrock

Minor Components

Elwop soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Mittenbutte soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Badland
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

296—Megonot-Yawdim clay loams, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Megonot soils: 50 percent
Yawdim soils: 35 percent
Minor components: 15 percent

Component Descriptions

Megonot soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 5.1 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 3 SAR (nonsodic)

Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; clay loam
Bw—4 to 15 inches; clay
Bk—15 to 33 inches; clay
Cr—33 to 60 inches; bedrock

Yawdim soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Shallow Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big sagebrush, bluebunch wheatgrass, blue grama
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 3 inches; clay loam
C—3 to 16 inches; clay
Cr—16 to 60 inches; bedrock

Minor Components

Delpoint soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Cabbart soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit

Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Pylon soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

297—Muleherder-Ironbutte channery loams, wooded, 10 to 60 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Muleherder soils: 45 percent
Ironbutte soils: 40 percent
Minor components: 15 percent

Component Descriptions

Muleherder soils
Landform: Hill, ridge
Hillslope position: Backslope, summit
Parent material: Alluvium and/or colluvium derived from porcelanite
Slope: 10 to 60 percent
Surface fragments: About 2 percent angular channers
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 3.4 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 3 inches; channery loam
Bw—3 to 17 inches; channery loam
BCk—17 to 34 inches; extremely channery fine sandy loam
2C—34 to 60 inches; fragmental material

Ironbutte soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or colluvium derived from porcelanite
Slope: 10 to 60 percent
Surface fragments: About 2 percent angular channers
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 1.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 3 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 7s
Land capability (nonirrigated): 7s
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; channery loam
C—5 to 13 inches; very channery loam
2C—13 to 60 inches; fragmental material

Minor Components

Rockybutte soils
Composition: About 6 percent
Landform: Ridge
Hillslope position: Summit, shoulder
Slope: 0 to 10 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Well drained

Rock outcrop
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder
Slope: 10 to 60 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Drainage class: Unspecified

Mittenbutte soils
Composition: About 4 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 10 to 60 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

298—Nuncho clay loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Nuncho soils: 85 percent
Minor components: 15 percent

Component Descriptions

Nuncho soils
Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.8 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 5 inches; clay loam
Bt—5 to 25 inches; clay
Bk—25 to 60 inches; clay loam

Minor Components

Moorhead soils
- Composition: About 5 percent
- Landform: Fan remnant, alluvial fan
- Slope: 0 to 6 percent
- Depth to restrictive feature: More than 60 inches
- Drainage class: Well drained

Platmak soils
- Composition: About 5 percent
- Landform: Fan remnant, alluvial fan
- Slope: 0 to 6 percent
- Depth to restrictive feature: More than 60 inches
- Drainage class: Well drained

Recluse soils
- Composition: About 5 percent
- Landform: Fan remnant, alluvial fan
- Slope: 0 to 6 percent
- Depth to restrictive feature: More than 60 inches
- Drainage class: Well drained

299—Oldwolf-Fairburn loams, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Oldwolf soils: 50 percent
Fairburn soils: 30 percent
Minor components: 20 percent

Component Descriptions

Oldwolf soils
- Landform: Ridge, hill
- Hillslope position: Backslope, shoulder
- Parent material: Alluvium over residuum weathered from sandstone and shale
- Slope: 3 to 15 percent
- Surface fragments: Unspecified
- Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
- Drainage class: Well drained
- Slowest permeability: About 0.60 in/hr (moderate)
- Available water capacity: About 6.0 inches (low)
- Shrink-swell potential: About 4.5 LEP (moderate)
- Flooding hazard: None
- Ponding hazard: None
- Seasonal water table minimum depth: Greater than 6 feet

Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; loam
Bt—3 to 21 inches; clay loam
Bk—21 to 32 inches; loam
Cr—32 to 60 inches; bedrock

Fairburn soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, green needlegrass, needleandthread, big sagebrush, blue grama, little bluestem
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 4 inches; loam
C—4 to 15 inches; loam
Cr—15 to 60 inches; bedrock

Minor Components

Deekay soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Badland
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Klinedraw soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Samsil soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

300—Oshoto-Klinedraw silt loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Oshoto soils: 50 percent
Klinedraw soils: 35 percent
Minor components: 15 percent

Component Descriptions

Oshoto soils
Landform: Ridge, hill
Hillslope position: Footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.5 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None

Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, silver sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 7 inches; silt loam
Bt—7 to 32 inches; silty clay loam
Bk—32 to 60 inches; silt loam

Klinedraw soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.3 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; silt loam
Bt—4 to 24 inches; silty clay loam
Bk—24 to 32 inches; silt loam
Cr—32 to 60 inches; bedrock

Minor Components

Ziggy soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Jaywest soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ucross soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 0 to 36 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

301—Oshoto-Klinedraw silt loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Oshoto soils: 45 percent
Klinedraw soils: 35 percent
Minor components: 20 percent

Component Descriptions

Oshoto soils

Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.5 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)

Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 7 inches; silt loam
Bt—7 to 32 inches; silty clay loam
Bk—32 to 60 inches; silt loam

Klinedraw soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.3 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; silt loam
Bt—4 to 24 inches; silty clay loam
Bk—24 to 32 inches; silt loam
Cr—32 to 60 inches; bedrock

Minor Components

Ucross soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Fairburn soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Xema soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Ziggy soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Footslope, backslope
Slope: 6 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

302—Oshoto-Moorhead complex, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Oshoto soils: 50 percent
Moorhead soils: 30 percent
Minor components: 20 percent

Component Descriptions

Oshoto soils

Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.5 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, silver sagebrush

Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 7 inches; silt loam
Bt—7 to 32 inches; silty clay loam
Bk—32 to 60 inches; silt loam

Moorhead soils
Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 11.0 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 3 inches; silty clay loam
Bt—3 to 24 inches; silty clay
Bk—24 to 60 inches; silty clay loam

Minor Components

Recluse soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Jaywest soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Hillslope position: Footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ziggy soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent

Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Deekay soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

303—Oshoto-Ziggy silt loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Oshoto soils: 50 percent
Ziggy soils: 35 percent
Minor components: 15 percent

Component Descriptions

Oshoto soils
Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.5 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, silver sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 7 inches; silt loam
Bt—7 to 32 inches; silty clay loam
Bk—32 to 60 inches; silt loam

Ziggy soils

Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.4 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, silver sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 4 inches; silt loam
Bw—4 to 17 inches; silty clay loam
Bk—17 to 60 inches; silt loam

Minor Components

Recluse soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Jaywest soils

Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Hillslope position: Footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ucross soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

304—Parmleed-Bidman association, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Parmleed soils: 40 percent
Bidman soils: 30 percent
Minor components: 30 percent

Component Descriptions

Parmleed soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 5.3 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy, 10-14 Northern Plains
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
E—0 to 4 inches; fine sandy loam
Bt—4 to 17 inches; clay
Bk—17 to 30 inches; clay loam
Cr—30 to 60 inches; bedrock

Bidman soils
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from calcareous shale
Slope: 3 to 15 percent

Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 14 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy, 10-14 Northern Plains
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
E—0 to 2 inches; fine sandy loam
Bt—2 to 17 inches; clay
Btk—17 to 25 inches; clay loam
Bk—25 to 60 inches; loam

Minor Components

Forkwood soils
Composition: About 15 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Worfka soils
Composition: About 15 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

305—Pinehill clay loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Pinehill soils: 85 percent
Minor components: 15 percent

Component Descriptions

Pinehill soils

Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.4 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

A—0 to 3 inches; clay loam
Bt—3 to 31 inches; clay
Bk—31 to 60 inches; clay loam

Minor Components

Foreleft soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Pylon soils

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Echeta, cool soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent

Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

306—Pinehill-Pylon clay loams, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Pinehill soils: 50 percent
Pylon soils: 35 percent
Minor components: 15 percent

Component Descriptions

Pinehill soils

Landform: Hill, ridge
Hillslope position: Footslope, backslope
Parent material: Alluvium derived from calcareous shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.4 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 3 inches; clay loam
Bt—3 to 31 inches; clay
Bk—31 to 60 inches; clay loam

Pylon soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 3 to 15 percent

Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 5.1 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:
A—0 to 3 inches; clay loam
Bt—3 to 21 inches; clay
Bk—21 to 30 inches; clay loam
Cr—30 to 60 inches; bedrock

Minor Components

Foreleft soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Bonfri soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Megonot soils
Composition: About 3 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Yawdim soils
Composition: About 3 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder

Slope: 3 to 15 percent
Depth to restrictive feature: 16 inches to bedrock (paralithic)
Drainage class: Well drained

307—Pinehill complex, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Pinehill loam soils: 45 percent
Pinehill clay loam soils: 40 percent
Minor components: 15 percent

Component Descriptions

Pinehill loam soils
Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
E—0 to 6 inches; loam
Bt—6 to 24 inches; clay
Bk—24 to 60 inches; clay loam

Pinehill clay loam soils
Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified

Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.4 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 3 inches; clay loam
Bt—3 to 31 inches; clay
Bk—31 to 60 inches; clay loam

Minor Components

Foreleft soils
Composition: About 6 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Vanstel soils
Composition: About 3 percent
Landform: Fan remnant, alluvial fan
Hillslope position: Footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Pylon soils
Composition: About 6 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

308—Pinehill-Pylon loams, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)

Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Pinehill soils: 45 percent
Pylon soils: 35 percent
Minor components: 20 percent

Component Descriptions

Pinehill soils

Landform: Hill, ridge
Hillslope position: Footslope, backslope
Parent material: Alluvium derived from calcareous shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
E—0 to 6 inches; loam
Bt—6 to 24 inches; clay
Bk—24 to 60 inches; clay loam

Pylon soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 5.8 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium

Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:
E—0 to 5 inches; loam
Bt—5 to 21 inches; clay
Bk—21 to 34 inches; clay loam
Cr—34 to 60 inches; bedrock

Minor Components

Foreleft soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Bonfri soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Pylon soils
Composition: About 4 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Megonot soils
Composition: About 3 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Yawdim soils
Composition: About 3 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 16 inches to bedrock (paralithic)
Drainage class: Well drained

309—Pitchdraw-Ashollow-Mittenbutte fine sandy loams, 3 to 20 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Pitchdraw soils: 40 percent
Ashollow soils: 25 percent
Mittenbutte soils: 15 percent
Minor components: 20 percent

Component Descriptions

Pitchdraw soils
Landform: Hill, ridge
Hillslope position: Summit, backslope
Parent material: Alluvium and/or eolian deposits over residuum weathered from calcareous sandstone
Slope: 3 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 4.4 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; fine sandy loam
Bk—4 to 31 inches; fine sandy loam
Cr—31 to 60 inches; bedrock

Ashollow soils
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone

Slope: 3 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; fine sandy loam
C—5 to 60 inches; sandy loam, fine sandy loam

Mittenbutte soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous sandstone
Slope: 3 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.3 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, bluebunch wheatgrass, little bluestem, blue grama, threadleaf sedge
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 3 inches; fine sandy loam
C—3 to 16 inches; fine sandy loam
Cr—16 to 60 inches; bedrock

Minor Components

Vonalf soils
Composition: About 5 percent
Landform: Alluvial fan, hill
Hillslope position: Footslope, backslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Xema soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Elwop soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Ucross soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

310—Rockypoint loam, 0 to 3 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Rockypoint soils: 80 percent
Minor components: 20 percent

Component Descriptions

Rockypoint soils
Landform: Stream terrace, flood plain
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified

Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Lowland (15-17np)
Potential native vegetation: green needlegrass, cottonwood, slender wheatgrass, western wheatgrass, Sandberg bluegrass, needleandthread, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; loam
C—3 to 60 inches; stratified fine sandy loam to clay loam

Minor Components

Sodawells soils
Composition: About 5 percent
Landform: Stream terrace on valley, flood plain on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Pathfinder soils
Composition: About 5 percent
Landform: Flood plain on valley, stream terrace on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Somewhat excessively drained

Boruff soils
Composition: About 5 percent
Landform: Flood plain on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

Iwait soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

311—Rockypoint-Boruff complex, 0 to 3 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Rockypoint soils: 50 percent
Boruff soils: 40 percent
Minor components: 10 percent

Component Descriptions

Rockypoint soils

Landform: Flood plain on valley, stream terrace on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Lowland (15-17np)
Potential native vegetation: green needlegrass, bearded wheatgrass, cottonwood, slender wheatgrass, western wheatgrass, Sandberg bluegrass, needleandthread, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; loam
C—3 to 60 inches; stratified fine sandy loam to clay loam

Boruff soils

Landform: Flood plain on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 8.9 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: About 3 inches
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodicity maximum: About 13 SAR (moderately sodic)
Ecological site: Lowland (15-17np)
Potential native vegetation: Nebraska sedge, western wheatgrass, basin wildrye, slender wheatgrass
Land capability (irrigated): 5w
Land capability (nonirrigated): 5w
Typical Profile:
A—0 to 2 inches; silty clay
Cy—2 to 60 inches; stratified fine sandy loam to silty clay

Minor Components

Iwait soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Sodawells soils
Composition: About 5 percent
Landform: Stream terrace on valley, flood plain on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

312—Rockypoint-Sodawells complex, 0 to 3 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Rockypoint soils: 50 percent
Sodawells soils: 40 percent
Minor components: 10 percent

Component Descriptions

Rockypoint soils

Landform: Flood plain on valley, stream terrace on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Lowland (15-17np)
Potential native vegetation: green needlegrass, cottonwood, slender wheatgrass, western wheatgrass, Sandberg bluegrass, needleandthread, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; loam
C—3 to 60 inches; stratified fine sandy loam to clay loam

Sodawells soils

Landform: Stream terrace on valley, flood plain on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Lowland (15-17np)
Potential native vegetation: green needlegrass, bearded wheatgrass, cottonwood, slender wheatgrass, western wheatgrass, Sandberg bluegrass, needleandthread, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:
A—0 to 5 inches; fine sandy loam
C—5 to 60 inches; stratified loamy fine sand to silt loam

Minor Components

Pathfinder soils
Composition: About 5 percent
Landform: Flood plain on valley, stream terrace on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Somewhat excessively drained

Boruff soils
Composition: About 5 percent
Landform: Flood plain on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

313—Savageton-Samday clay loams, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Savageton soils: 45 percent
Samday soils: 35 percent
Minor components: 20 percent

Component Descriptions

Savageton soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium

Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 10 SAR (slightly sodic)
Ecological site: Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, blue grama, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 6 inches; clay loam
Bw—6 to 20 inches; clay
Bk—20 to 29 inches; clay
Cr—29 to 60 inches; bedrock

Samday soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from calcareous shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, big sagebrush, bluebunch wheatgrass, blue grama
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e
Typical Profile:
A—0 to 2 inches; clay loam
C—2 to 16 inches; clay
Cr—16 to 60 inches; bedrock

Minor Components

Theedle soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Shingle soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Renohill soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Badland

Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

314—Savageton-Silhouette clay loams, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Savageton soils: 45 percent
Silhouette soils: 35 percent
Minor components: 20 percent

Component Descriptions

Savageton soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None

Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, blue grama, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 6 inches; clay loam
Bw—6 to 20 inches; clay
Bk—20 to 29 inches; clay
Cr—29 to 60 inches; bedrock

Silhouette soils
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from calcareous shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.5 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, blue grama, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 2 inches; clay loam
Bw—2 to 28 inches; clay
Bk—28 to 60 inches; clay loam

Minor Components

Renohill soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Theedle soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Samday soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: inches to bedrock (paralithic)
Drainage class: Well drained

Ulm soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 6 to 10 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

315—Shingle-Taluce-Badland complex, 6 to 45 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Shingle soils: 40 percent
Taluce soils: 25 percent
Badland: 15 percent
Minor components: 20 percent

Component Descriptions

Shingle soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 6 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)

Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (10-14np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, needleandthread, big sagebrush, green needlegrass, little bluestem
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 2 inches; loam
C—2 to 12 inches; loam
Cr—12 to 60 inches; bedrock

Taluce soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous sandstone
Slope: 6 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, bluebunch wheatgrass, little bluestem, blue grama, threadleaf sedge
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 2 inches; fine sandy loam
C—2 to 18 inches; fine sandy loam
Cr—18 to 60 inches; bedrock

Badland
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 6 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to bedrock (paralithic)

Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8
Typical Profile:
Cr—0 to 60 inches; bedrock

Minor Components

Bowbac soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Samday soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 45 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Theedle soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 45 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Turnercrest soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

316—Shingle-Taluce-Badland complex, wooded, 6 to 45 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Shingle soils: 40 percent
Taluce soils: 25 percent
Badland: 15 percent
Minor components: 20 percent

Component Descriptions

Shingle soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 6 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 3 inches; loam
C—3 to 13 inches; loam
Cr—13 to 60 inches; bedrock

Taluce soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from calcareous sandstone

Slope: 6 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 3 inches; fine sandy loam
C—3 to 19 inches; fine sandy loam
Cr—19 to 60 inches; bedrock

Badland

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from sandstone and shale
Slope: 6 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified
Slowest permeability: Unspecified
Available water capacity: Unspecified
Shrink-swell potential: Unspecified
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Unspecified
Calcium carbonate maximum: Unspecified
Gypsum maximum: Unspecified
Salinity maximum: Unspecified
Sodicity maximum: Unspecified
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8
Typical Profile:
Cr—0 to 60 inches; bedrock

Minor Components

Cushman soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Wibaux soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 45 percent
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Well drained

Terro soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Theedle soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

317—Silhouette-Ulm clay loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Silhouette soils: 45 percent
Ulm soils: 35 percent
Minor components: 20 percent

Component Descriptions

Silhouette soils
Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from calcareous shale

Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.5 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, blue grama, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 2 inches; clay loam
Bw—2 to 28 inches; clay
Bk—28 to 60 inches; clay loam

Ulm soils

Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, blue grama, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 4 inches; clay loam
Bt—4 to 25 inches; clay
Bk—25 to 60 inches; clay loam

Minor Components

Savageton soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: inches to bedrock (paralithic)
Drainage class: Well drained

Theedle soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Bidman soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Zigweid soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

318—Sodawells-Pathfinder-Boruff complex, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Sodawells soils: 45 percent
Pathfinder soils: 30 percent
Boruff soils: 15 percent
Minor components: 10 percent

Component Descriptions

Sodawells soils
Landform: Stream terrace on valley, flood plain on valley
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent

Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Lowland (15-17np)
Potential native vegetation: green needlegrass, bearded wheatgrass, cottonwood, slender wheatgrass, western wheatgrass, Sandberg bluegrass, needleandthread, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; fine sandy loam
C—5 to 60 inches; stratified loamy fine sand to silt loam

Pathfinder soils
Landform: Flood plain on valley, stream terrace on valley
Parent material: Alluvium derived from calcareous sandstone
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Somewhat excessively drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 5.6 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Lowland (15-17np)
Potential native vegetation: green needlegrass, bearded wheatgrass, cottonwood, slender wheatgrass, western wheatgrass, Sandberg bluegrass, needleandthread, silver sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; fine sandy loam
C—5 to 60 inches; stratified fine sand to loamy fine sand

Boruff soils
Landform: Flood plain on valley
Parent material: Alluvium derived from sandstone and shale

Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 8.9 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: About 0 inches
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodicity maximum: About 13 SAR (moderately sodic)
Ecological site: Lowland (15-17np)
Potential native vegetation: Nebraska sedge, western wheatgrass, basin wildrye, slender wheatgrass
Land capability (irrigated): 5w
Land capability (nonirrigated): 5w
Typical Profile:
A—0 to 2 inches; silty clay
Cy—2 to 60 inches; stratified fine sandy loam to silty clay

Minor Components

Rockypoint soils
Composition: About 10 percent
Landform: Flood plain on valley, stream terrace on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

319—Spottedhorse-Leiter Complex, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Spottedhorse soils: 45 percent
Leiter soils: 35 percent
Minor components: 20 percent

Component Descriptions

Spottedhorse soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 0 to 6 percent

Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
E—0 to 4 inches; loam
Bt—4 to 27 inches; clay
Bk—27 to 35 inches; clay loam
Cr—35 to 60 inches; bedrock

Leiter soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; clay loam
Bt—3 to 22 inches; clay
Bk—22 to 33 inches; clay loam
Cr—33 to 60 inches; bedrock

Minor Components

Jaywest soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Cromack soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Samsil soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 6 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Ucross soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

320—Stetter clay, 0 to 3 percent slopes

Map Unit Setting

MLRA: 60A: Pierre Shale Plains and Badlands
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Stetter soils: 85 percent
Minor components: 15 percent

Component Descriptions

Stetter soils
Landform: Stream terrace, flood plain
Parent material: Alluvium derived from acid shale
Slope: 0 to 3 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches

Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 8.9 inches (moderate)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: Occasional
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 3 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Lowland (15-17np)
Potential native vegetation: Nebraska sedge, western wheatgrass, basin wildrye, slender wheatgrass
Land capability (irrigated): 4s
Land capability (nonirrigated): 4s
Typical Profile:
A—0 to 3 inches; silty clay
C—3 to 60 inches; stratified silt loam to silty clay

Minor Components

Swanboy soils
Composition: About 5 percent
Landform: Alluvial fan
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Cedar Butte soils
Composition: About 5 percent
Landform: Alluvial fan
Slope: 0 to 3 percent
Depth to restrictive feature: None within 60 inches
Drainage class: Well drained

Boruff soils
Composition: About 5 percent
Landform: Flood plain on valley
Slope: 0 to 3 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Poorly drained

321—Swanboy-Cedar Butte-Slickspots complex, 0 to 6 percent slopes

Map Unit Setting

MLRA: 60A: Pierre Shale Plains and Badlands
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Swanboy soils: 35 percent
Cedar Butte soils: 30 percent
Slickspots soils: 15 percent
Minor components: 20 percent

Component Descriptions

Swanboy soils

Landform: Alluvial fan
Parent material: Alluvium derived from acid shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.00 in/hr (very slow)
Available water capacity: About 6.8 inches (moderate)
Shrink-swell potential: About 10.5 LEP (very high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 2 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodicity maximum: About 25 SAR (moderately sodic)
Ecological site: Unspecified
Potential native vegetation: western wheatgrass, buffalograss, prairie Junegrass, Sandberg bluegrass, big sagebrush, green needlegrass
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s

Typical Profile:

A—0 to 4 inches; clay
Bssyz—4 to 45 inches; clay
Cy—45 to 60 inches; clay

Cedar Butte soils

Landform: Alluvial fan
Parent material: Alluvium derived from shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: None within 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 9.4 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodicity maximum: About 20 SAR (moderately sodic)

Ecological site: Unspecified
Potential native vegetation: western wheatgrass, alkali sacaton, big sagebrush, blue grama, gardner saltbush, inland saltgrass, Indian ricegrass, greasewood
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s
Typical Profile:
E—0 to 2 inches; silt loam
Btn—2 to 14 inches; silty clay loam
Bkyz—14 to 35 inches; silty clay loam
2Cyz—35 to 60 inches; silty clay

Slickspots
Landform: Alluvial fan
Parent material: Unspecified
Slope: 0 to 2 percent
Surface fragments: Unspecified
Depth to restrictive feature: 0 inches to highly alkaline layers
Drainage class: Well drained
Slowest permeability: About 0.00 in/hr (very slow)
Salinity maximum: About 20 mmhos/cm (strongly saline)
Sodicity maximum: About 45 SAR (strongly sodic)
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 8
Land capability (nonirrigated): 8

Minor Components

Winler soils
Composition: About 10 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Twotop soils
Composition: About 10 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

322—Toby-Twilight-Blacksheep fine sandy loams, 3 to 30 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Toby soils: 40 percent
Twilight soils: 30 percent
Blacksheep soils: 15 percent
Minor components: 15 percent

Component Descriptions

Toby soils

Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 4 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 7 inches; fine sandy loam
Bw—7 to 33 inches; fine sandy loam
C—33 to 60 inches; fine sandy loam

Twilight soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 4.1 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 4 percent
Gypsum maximum: None

Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, little bluestem, Indian ricegrass, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; fine sandy loam
Bw—5 to 20 inches; fine sandy loam
Bk—20 to 29 inches; fine sandy loam
Cr—29 to 60 inches; bedrock

Blacksheep soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 4 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, bluebunch wheatgrass, little bluestem, blue grama, threadleaf sedge
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 3 inches; fine sandy loam
Bk—3 to 15 inches; fine sandy loam
Cr—15 to 60 inches; bedrock

Minor Components

Bonfri soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope
Slope: 3 to 10 percent
Depth to restrictive feature: 50 to 60 inches to bedrock (paralithic)
Drainage class: Well drained

Bonfri soils
Composition: About 5 percent
Landform: Hill, ridge

Hillslope position: Summit, shoulder
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Foreleft soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope
Slope: 3 to 10 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

323—Ucross-Fairburn loams, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ucross soils: 45 percent
Fairburn soils: 35 percent
Minor components: 20 percent

Component Descriptions

Ucross soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.1 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:
A—0 to 5 inches; loam
Bk—5 to 31 inches; clay loam
Cr—31 to 60 inches; bedrock

Fairburn soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from sandstone and shale
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, green needlegrass, needleandthread, big sagebrush, blue grama, little bluestem
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 4 inches; loam
C—4 to 15 inches; loam
Cr—15 to 60 inches; bedrock

Minor Components

Oldwolf soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Xema soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Mittenbutte soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit

Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Klinedraw soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

324—Ucross-Fairburn loams, 15 to 45 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ucross soils: 45 percent
Fairburn soils: 35 percent
Minor components: 20 percent

Component Descriptions

Ucross soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 15 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.1 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e

Typical Profile:
A—0 to 5 inches; loam
Bk—5 to 31 inches; clay loam
Cr—31 to 60 inches; bedrock

Fairburn soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from sandstone and shale
Slope: 15 to 45 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (15-17np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, green needlegrass, needleandthread, big sagebrush, blue grama, little bluestem
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 4 inches; loam
C—4 to 15 inches; loam
Cr—15 to 60 inches; bedrock

Minor Components

Badland
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 15 to 45 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Pitchdraw soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, summit
Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Cromack soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder, backslope

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Samsil soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 15 to 45 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

325—Ucross-Fairburn loams, wooded, 10 to 50 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,800 feet (1,067 to 1,463 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ucross soils: 45 percent
Fairburn soils: 35 percent
Minor components: 20 percent

Component Descriptions

Ucross soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 10 to 50 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 6.0 inches (moderate)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 6 inches; loam
Bk—6 to 32 inches; clay loam
Cr—32 to 60 inches; bedrock

Fairburn soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from sandstone and shale
Slope: 10 to 50 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.3 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; loam
C—5 to 15 inches; loam
Cr—15 to 60 inches; bedrock

Minor Components

Badland
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 10 to 50 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Mittenbutte soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 10 to 50 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

Xema soils

Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 10 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Ziggy soils

Composition: About 5 percent
Landform: Hill, ridge, fan remnant
Hillslope position: Backslope, footslope
Slope: 10 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

326—Ucross-Iwait-Fairburn loams, wooded, 3 to 30 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part (fig. 3)
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ucross soils: 35 percent
Iwait soils: 25 percent
Fairburn soils: 20 percent
Minor components: 20 percent

Component Descriptions

Ucross soils

Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 5.9 inches (low)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)

Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 6 inches; loam
Bk—6 to 32 inches; clay loam
Cr—32 to 60 inches; bedrock

Iwait soils

Landform: Ridge, fan remnant, hill
Hillslope position: Backslope
Parent material: Alluvium derived from sandstone and shale
Slope: 3 to 20 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.4 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)

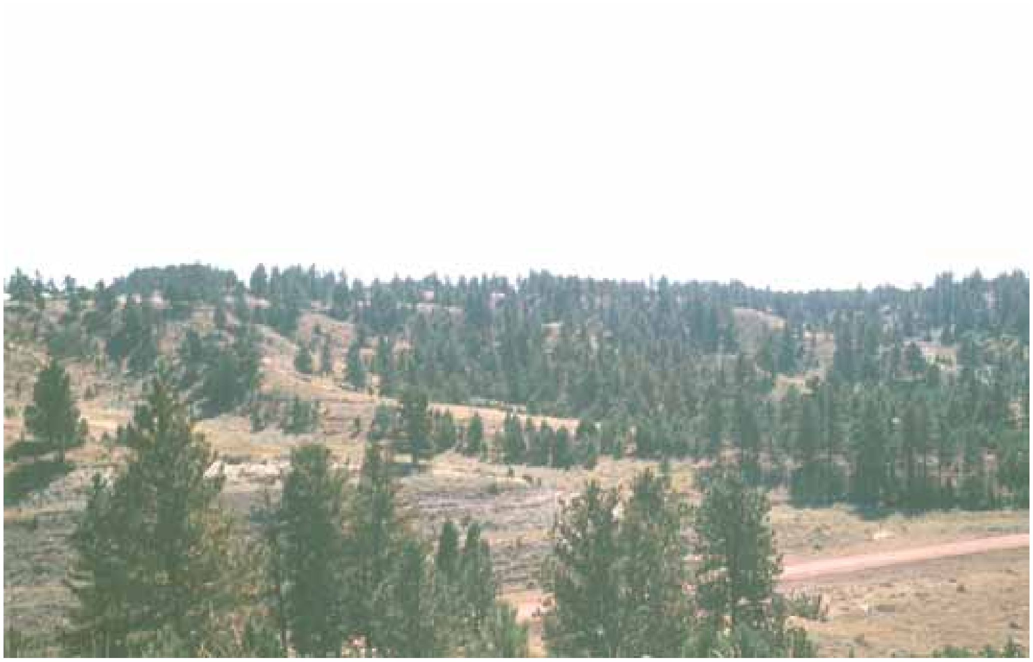


Figure 3. Typical area of Ucross-Iwait-Fairburn loams, wooded, 3 to 3 percent slopes.

Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 7 inches; loam
Bk—7 to 60 inches; clay loam

Fairburn soils
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from sandstone and shale
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; loam
C—5 to 16 inches; loam
Cr—16 to 60 inches; bedrock

Minor Components

Badland
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 10 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Deekay soils
Composition: About 5 percent
Landform: Fan remnant, hill, ridge
Hillslope position: Footslope, backslope

Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Elwop soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Xema soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

327—Ulm-Bidman complex, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ulm soils: 45 percent
Bidman soils: 40 percent
Minor components: 15 percent

Component Descriptions

Ulm soils
Landform: Alluvial fan, fan remnant
Parent material: Loamy alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)

Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, blue grama, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 4 inches; clay loam
Bt—4 to 25 inches; clay
Bk—25 to 60 inches; clay loam

Bidman soils
Landform: Alluvial fan, fan remnant
Parent material: Loamy alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.8 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (10-14np)
Potential native vegetation: needleandthread, western wheatgrass, green needlegrass, blue grama, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
E—0 to 3 inches; loam
Bt—3 to 21 inches; clay
Bk—21 to 60 inches; clay loam

Minor Components

Forkwood soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Platmak soils
Composition: About 5 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Silhouette soils

Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

328—Ulm clay loam, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ulm soils: 80 percent
Minor components: 20 percent

Component Descriptions

Ulm soils

Landform: Alluvial fan, fan remnant
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, blue grama, big sagebrush, skyline bluegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:

A—0 to 4 inches; clay loam
Bt—4 to 25 inches; clay
Bk—25 to 60 inches; clay loam

Minor Components

Wyotite soils

Composition: About 5 percent

Landform: Fan remnant, alluvial fan
Hillslope position: Footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Forkwood soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Bidman soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Nuncho soils
Composition: About 5 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

329—Ulm clay loam, 3 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ulm soils: 90 percent
Minor components: 10 percent

Component Descriptions

Ulm soils
Landform: Fan remnant, stream terrace, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 3 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 11.2 inches (high)
Shrink-swell potential: About 7.5 LEP (high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet

Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey, 10-14 Northern Plains
Potential native vegetation: green needlegrass, western wheatgrass, blue grama
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 9 inches; clay loam
Bt—9 to 22 inches; clay
Bk—22 to 60 inches; clay loam

Minor Components

Wyarno soils
Composition: About 4 percent
Landform: Fan remnant, stream terrace, alluvial fan
Slope: 3 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Bidman soils
Composition: About 3 percent
Landform: Alluvial fan, fan remnant, stream terrace
Slope: 3 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Ulm soils
Composition: About 3 percent
Landform: Alluvial fan, fan remnant, stream terrace
Slope: 3 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

330—Ulm clay loam, 6 to 10 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Ulm soils: 85 percent
Minor components: 15 percent

Component Descriptions

Ulm soils
Landform: Hill, ridge
Hillslope position: Backslope

Parent material: Alluvium derived from calcareous shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: Unspecified
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (10-14np)
Potential native vegetation: green needlegrass, western wheatgrass, blue grama, big sagebrush, skyline bluegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; clay loam
Bt—4 to 25 inches; clay
Bk—25 to 60 inches; clay loam

Minor Components

Savageton soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 28 inches to bedrock (paralithic)
Drainage class: Well drained

Samday soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 16 inches to bedrock (paralithic)
Drainage class: Well drained

Renohill soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

331—Valent-Duneland complex, 3 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Valent soils: 60 percent
Duneland: 35 percent
Minor components: 5 percent

Component Descriptions

Valent soils

Landform: Dune
Hillslope position: Footslope, backslope
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Excessively drained
Slowest permeability: About 6.00 in/hr (rapid)
Available water capacity: About 4.1 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 1 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sands (15-17np)
Potential native vegetation: prairie sandreed, sand bluestem, needleandthread, Indian ricegrass, silver sagebrush, threadleaf sedge
Land capability (irrigated): 6e
Land capability (nonirrigated): 6e

Typical Profile:

A—0 to 3 inches; loamy sand
C—3 to 60 inches; loamy sand

Duneland

Landform: Dune
Parent material: Eolian deposits derived from calcareous sandstone
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Excessively drained
Slowest permeability: About 6.00 in/hr (rapid)
Available water capacity: About 4.1 inches (low)
Shrink-swell potential: About 1.5 LEP (low)

Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 1 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Unspecified
Potential native vegetation: Unspecified
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e

Minor Components

Vonalf soils
Composition: About 5 percent
Landform: Hill
Hillslope position: Backslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

332—Vanstel-Pinehill complex, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58A: Northern Rolling High Plains, Northern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 43 degrees F. (6 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Vanstel soils: 50 percent
Pinehill soils: 30 percent
Minor components: 20 percent

Component Descriptions

Vanstel soils
Landform: Alluvial fan, fan remnant
Hillslope position: Footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 11.4 inches (high)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet

Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy (15-17np)
Potential native vegetation: western wheatgrass, needleandthread, blue grama, green needlegrass, Sandberg bluegrass, big bluestem, big sagebrush
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 4 inches; silt loam
Bt—4 to 19 inches; silty clay loam
Bk—19 to 60 inches; silt loam

Pinehill soils
Landform: Fan remnant, alluvial fan
Parent material: Alluvium derived from calcareous shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.06 in/hr (slow)
Available water capacity: About 10.9 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Clayey (15-17np)
Potential native vegetation: green needlegrass, western wheatgrass, big bluestem, big sagebrush, blue grama, sideoats grama
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e
Typical Profile:
A—0 to 4 inches; silty clay loam
Bt—4 to 23 inches; silty clay
Bk—23 to 60 inches; silty clay loam

Minor Components

Foreleft soils
Composition: About 7 percent
Landform: Alluvial fan, fan remnant
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Pinehill soils
Composition: About 7 percent
Landform: Fan remnant, alluvial fan

Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Yamacall soils
Composition: About 6 percent
Landform: Fan remnant, alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

333—Vonalee-Terro-Taluce fine sandy loams, 3 to 30 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Vonalee soils: 40 percent
Terro soils: 25 percent
Taluce soils: 15 percent
Minor components: 20 percent

Component Descriptions

Vonalee soils
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, western wheatgrass, blue grama, silver sagebrush, threadleaf sedge

Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; fine sandy loam
Bt—3 to 24 inches; fine sandy loam
Bk—24 to 60 inches; fine sandy loam

Terro soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from calcareous sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 4.2 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, western wheatgrass, blue grama, silver sagebrush, threadleaf sedge
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; fine sandy loam
Bt—3 to 16 inches; fine sandy loam
Bk—16 to 30 inches; fine sandy loam
Cr—30 to 60 inches; bedrock

Taluce soils

Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from calcareous sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 1.99 in/hr (moderately rapid)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None

Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, bluebunch wheatgrass, little bluestem, blue grama, threadleaf sedge
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 2 inches; fine sandy loam
C—2 to 18 inches; fine sandy loam
Cr—18 to 60 inches; bedrock

Minor Components

Julesburg soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Footslope, backslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Hiland soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Bowbac soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Turnercrest soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

334—Vonalf-Xema-Mittenbutte fine sandy loams, 3 to 30 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)

Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Vonalf soils: 40 percent
Xema soils: 25 percent
Mittenbutte soils: 15 percent
Minor components: 20 percent

Component Descriptions

Vonalf soils

Landform: Ridge, hill
Hillslope position: Backslope
Parent material: Alluvium and/or eolian deposits derived from calcareous sandstone
Slope: 3 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, Indian ricegrass, little bluestem, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 6 inches; fine sandy loam
Bt—6 to 34 inches; fine sandy loam
Bk—34 to 60 inches; fine sandy loam

Xema soils

Landform: Hill, ridge
Hillslope position: Shoulder, summit
Parent material: Alluvium and/or eolian deposits over residuum weathered from calcareous sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 4.4 inches (low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None

Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Sandy (15-17np)
Potential native vegetation: needleandthread, prairie sandreed, little bluestem, Indian ricegrass, silver sagebrush, threadleaf sedge, western wheatgrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 4 inches; fine sandy loam
Bt—4 to 22 inches; fine sandy loam
Bk—22 to 31 inches; fine sandy loam
Cr—31 to 60 inches; bedrock

Mittenbutte soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Alluvium over residuum weathered from calcareous sandstone
Slope: 3 to 30 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.3 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, bluebunch wheatgrass, little bluestem, blue grama, threadleaf sedge
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 3 inches; fine sandy loam
C—3 to 16 inches; fine sandy loam
Cr—16 to 60 inches; bedrock

Minor Components

Arwite soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Backslope, footslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Elwop soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Julesburg soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Backslope, footslope
Slope: 3 to 15 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Fairburn soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 3 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained

335—Wibaux-Shingle-Taluce complex, 6 to 40 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Wibaux soils: 30 percent
Shingle soils: 25 percent
Taluce soils: 20 percent
Minor components: 25 percent

Component Descriptions

Wibaux soils
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or colluvium derived from porcelanite
Slope: 6 to 40 percent
Surface fragments: About 2 percent angular channers
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 1.7 inches (very low)

Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Loamy (10-14np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, green needlegrass, needleandthread, big sagebrush, blue grama, little bluestem
Land capability (irrigated): 7s
Land capability (nonirrigated): 7s
Typical Profile:
A—0 to 3 inches; channery loam
C—3 to 14 inches; extremely channery loam
2C—14 to 60 inches; fragmental material

Shingle soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from sandstone and shale
Slope: 6 to 40 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Shallow Loamy (10-14np)
Potential native vegetation: bluebunch wheatgrass, western wheatgrass, blue grama, little bluestem, needleandthread, threadleaf sedge, big sagebrush, green needlegrass
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 2 inches; loam
C—2 to 12 inches; loam
Cr—12 to 60 inches; bedrock

Taluce soils
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Parent material: Residuum weathered from calcareous sandstone
Slope: 6 to 40 percent

Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Shallow Sandy (10-14np)
Potential native vegetation: needleandthread, prairie sandreed, bluebunch wheatgrass, little bluestem, blue grama, threadleaf sedge
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
A—0 to 2 inches; fine sandy loam
C—2 to 18 inches; fine sandy loam
Cr—18 to 60 inches; bedrock

Minor Components

Badland
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 40 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Cushman soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Theedle soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, summit
Slope: 6 to 40 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Kishona soils
Composition: About 5 percent
Landform: Fan remnant, ridge, hill
Hillslope position: Footslope, backslope
Slope: 6 to 15 percent

Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Turnercrest soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

336—Wibaux-Shingle-Taluce complex, wooded, 6 to 40 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Wibaux soils: 30 percent
Shingle soils: 25 percent
Taluce soils: 20 percent
Minor components: 25 percent

Component Descriptions

Wibaux soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium and/or colluvium derived from porcelanite
Slope: 6 to 40 percent
Surface fragments: About 2 percent angular channers
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 1.7 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush

Land capability (irrigated): 7s
Land capability (nonirrigated): 7s
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; channery loam
C—4 to 15 inches; very channery loam
2C—15 to 60 inches; fragmental material

Shingle soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from sandstone and shale
Slope: 6 to 40 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 5 SAR (slightly sodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 3 inches; loam
C—3 to 13 inches; loam
Cr—13 to 60 inches; bedrock

Taluce soils
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Residuum weathered from calcareous sandstone
Slope: 6 to 40 percent
Surface fragments: Unspecified
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 2.00 in/hr (moderately rapid)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 1.5 LEP (low)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None

Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 0 SAR (nonsodic)
Ecological site: Ponderosa Pine and Little Bluestem Woodland
Potential native vegetation: ponderosa pine, little bluestem, needleandthread, Rocky Mountain juniper, big sagebrush
Land capability (irrigated): 7e
Land capability (nonirrigated): 7e
Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 3 inches; fine sandy loam
C—3 to 19 inches; fine sandy loam
Cr—19 to 60 inches; bedrock

Minor Components

Theedle soils
Composition: About 5 percent
Landform: Hill, ridge
Hillslope position: Shoulder, summit
Slope: 6 to 40 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Kishona soils
Composition: About 5 percent
Landform: Hill, ridge, fan remnant
Hillslope position: Backslope, footslope
Slope: 6 to 20 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Turnercrest soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Badland
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 40 percent
Depth to restrictive feature: 0 inches to bedrock (paralithic)
Drainage class: Unspecified

Terro soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder
Slope: 6 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

337—Winler-Twotop clays, 0 to 6 percent slopes

Map Unit Setting

MLRA: 60A: Pierre Shale Plains and Badlands
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 15 to 17 inches (381 to 432 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Winler soils: 50 percent
Twotop soils: 35 percent
Minor components: 15 percent

Component Descriptions

Winler soils

Landform: Ridge, hill
Hillslope position: Summit, shoulder
Parent material: Alluvium over residuum weathered from acid shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: About 0.00 in/hr (very slow)
Available water capacity: About 4.5 inches (low)
Shrink-swell potential: About 10.5 LEP (very high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 10 SAR (slightly sodic)
Ecological site: Dense Clay (15-17np)
Potential native vegetation: western wheatgrass, green needlegrass, Sandberg bluegrass, big sagebrush, birdfoot sagebrush
Land capability (irrigated): 4s
Land capability (nonirrigated): 4s

Typical Profile:

A—0 to 4 inches; clay
Bss—4 to 12 inches; clay
Bssyz—12 to 24 inches; clay
Cy—24 to 32 inches; clay
Cr—32 to 60 inches; bedrock

Twotop soils

Landform: Ridge, hill
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from acid shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches

Drainage class: Well drained
Slowest permeability: About 0.00 in/hr (very slow)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 10.5 LEP (very high)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodicity maximum: About 10 SAR (slightly sodic)
Ecological site: Dense Clay (15-17np)
Potential native vegetation: western wheatgrass, green needlegrass, Sandberg bluegrass, big sagebrush, birdfoot sagebrush
Land capability (irrigated): 4s
Land capability (nonirrigated): 4s

Typical Profile:
A—0 to 3 inches; clay
Bss—3 to 14 inches; clay
Bssyz—14 to 27 inches; clay
Cyz—27 to 60 inches; clay

Minor Components

Swanboy soils
Composition: About 5 percent
Landform: Alluvial fan
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Sabatka soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Summit, shoulder, backslope
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Cromack soils
Composition: About 5 percent
Landform: Ridge, hill
Hillslope position: Shoulder, backslope, summit
Slope: 0 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

338—Zigweid-Cambria loams, 0 to 6 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)

Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Zigweid soils: 50 percent
Cambria soils: 30 percent
Minor components: 20 percent

Component Descriptions

Zigweid soils

Landform: Alluvial fan, fan remnant, hill
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy, 10-14 Northern Plains
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e

Typical Profile:

A—0 to 4 inches; loam
Bw—4 to 13 inches; clay loam
Bk—13 to 60 inches; loam

Cambria soils

Landform: Alluvial fan, hill, fan remnant
Hillslope position: Footslope, backslope
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.3 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Low
Calcium carbonate maximum: About 15 percent

Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy, 10-14 Northern Plains
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 3 inches; loam
Bt—3 to 11 inches; silty clay loam
Bk—11 to 60 inches; loam

Minor Components

Forkwood soils
Composition: About 7 percent
Landform: Fan remnant, hill, alluvial fan
Hillslope position: Footslope, backslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Kishona soils
Composition: About 7 percent
Landform: Alluvial fan, fan remnant, hill
Hillslope position: Footslope, backslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

Wyarno soils
Composition: About 6 percent
Landform: Fan remnant, hill, alluvial fan
Hillslope position: Backslope, footslope
Slope: 0 to 6 percent
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained

339—Zigweid-Kishona-Cambria complex, 6 to 15 percent slopes

Map Unit Setting

MLRA: 58B: Northern Rolling High Plains, Southern Part
Elevation: 3,500 to 4,500 feet (1,067 to 1,372 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Average annual air temperature: 46 degrees F. (8 degrees C.)
Frost-free period: 105 to 130 days

Map Unit Composition

Zigweid soils: 30 percent
Kishona soils: 30 percent
Cambria soils: 25 percent
Minor components: 15 percent

Component Descriptions

Zigweid soils

Landform: Fan remnant, alluvial fan, hill, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy, 10-14 Northern Plains
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 1 inch; fine sandy loam
Bw—1 inch to 11 inches; loam
Bk—11 to 60 inches; loam

Kishona soils

Landform: Hill, ridge, alluvial fan, fan remnant
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.5 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy, 10-14 Northern Plains
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass

Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 5 inches; loam
Bk—5 to 60 inches; clay loam

Cambria soils
Landform: Fan remnant, hill, alluvial fan, ridge
Hillslope position: Backslope, footslope
Parent material: Alluvium derived from sandstone and shale
Slope: 6 to 15 percent
Surface fragments: Unspecified
Depth to restrictive feature: More than 60 inches
Drainage class: Well drained
Slowest permeability: About 0.60 in/hr (moderate)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 LEP (moderate)
Flooding hazard: None
Ponding hazard: None
Seasonal water table minimum depth: Greater than 6 feet
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodicity maximum: About 3 SAR (nonsodic)
Ecological site: Loamy, 10-14 Northern Plains
Potential native vegetation: needleandthread, western wheatgrass, blue grama, green needlegrass
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e
Typical Profile:
A—0 to 2 inches; loam
Bt—2 to 6 inches; clay loam
Bk—6 to 60 inches; loam

Minor Components

Theedle soils
Composition: About 8 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Cushman soils
Composition: About 7 percent
Landform: Hill, ridge
Hillslope position: Summit, shoulder
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. The “Taxonomic Classification of the Soils” table shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in sol. An example is Alfisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Ustalf (Ust), meaning burnt, implying dryness, plus alf, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Haplustalfs (Hapl), meaning minimal horizonation, plus ustalf, the suborder of the Alfisols that has an ustic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective Aridic identifies the subgroup that receives less precipitation than the one that typifies the great group. An example is Aridic Hapludalfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, superactive, mesic Aridic Haplustalfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The Deekay series is an example of a fine-loamy, mixed superactive mesic Aridic Haplustalfs.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 1998). Unless otherwise indicated, colors in the descriptions are for dry soil.

Following the pedon description is the range of important characteristics of the soils in the series.

Absted Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, and stream terraces
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 14 inches
Slope: 0 to 6 percent

Taxonomic class: Fine, smectitic, mesic Haplic Ustic Natrargids

Typical pedon: Absted fine sandy loam; SE 1/4, of the NE 1/4 of sec. 32, T. 55 N., R. 79 W.; latitude 44 degrees 42 minutes 49 seconds north; longitude 106 degrees 25 minutes 14 seconds west. Sheridan County

E—0 to 2 inches; light gray (10YR 7/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; strong thick platy structure parting to strong thin platy; slightly hard, very friable, slightly sticky and nonplastic; common fine and very fine roots; slightly alkaline (pH 7.6); abrupt smooth boundary. (0 to 8 inches thick)

Bt—2 to 8 inches; brown (10YR 5/3) clay, dark grayish brown (10YR 4/2) moist; strong medium columnar structure parting to strong medium and fine angular blocky; very hard, firm, sticky and plastic; few fine and medium roots; many prominent clay films on faces of peds; moderately alkaline (pH 8.2); clear smooth boundary. (5 to 16 inches thick)

Btkn—8 to 13 inches; brown (10YR 5/3) clay, dark grayish brown (10YR 4/2) moist; strong medium angular blocky structure; very hard, friable, sticky and plastic; few fine and medium roots; common distinct clay films on faces of peds; strongly effervescent; calcium carbonate and gypsum as common fine filaments and threads; strongly alkaline (pH 8.8); clear smooth boundary. (4 to 15 inches thick)

Bkn—13 to 60 inches; pale brown (10YR 6/3) clay loam, dark grayish brown (10YR 4/2) moist; moderate coarse subangular blocky structure; very hard, firm, sticky and plastic; strongly effervescent; many prominent threads of calcium carbonate and gypsum; very strongly alkaline (pH 9.0).

Range in Characteristics:

Depth to the natric horizon: 6 to 24 inches
Depth to an effervescent horizon: 6 to 20 inches

E horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: clay, clay loam, or silty clay loam
Reaction: slightly or moderately alkaline
Sodium Adsorption Ratio: 5 to 10
Electrical Conductivity: 2 to 4 millimhos per centimeter

Btkn horizon:
Texture: clay, clay loam, or silty clay
Reaction: strongly or very strongly alkaline
Sodium Adsorption Ratio: 13 to 30
Electrical Conductivity: 8 to 16 millimhos per centimeter

Bkny horizon:
Texture: clay, clay loam, or silty clay
Reaction: moderately to very strongly alkaline
Sodium Adsorption Ratio: 10 to 30
Electrical Conductivity: 8 to 16 millimhos per centimeter

Arvada Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, and stream terraces
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 14 inches
Slope: 0 to 6 percent

Taxonomic class: Fine, smectitic, mesic Vertic Natrargids

Typical pedon: Arvada fine sandy loam, about 340 feet west and 780 feet south of the northeast corner of sec. 36, T. 47 N., R. 71 W.; Southern Campbell County

E—0 to 2 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak coarse platy structure parting to weak medium granular; soft, friable, nonsticky and nonplastic; many fine and very fine roots; slightly alkaline; abrupt smooth boundary.

Btn—2 to 9 inches; brown (10YR 5/3) clay, dark brown (10YR 4/3) moist; moderate coarse and medium columnar structure parting to strong medium angular blocky; very hard, firm, sticky and plastic; common fine and very fine roots; common prominent clay films on faces of peds; very strongly alkaline; clear wavy boundary.

Btkn—9 to 15 inches; brown (10YR 5/3) clay, dark brown (10YR 4/3) moist; moderate medium and fine subangular blocky structure; very hard, firm, sticky and plastic;

few fine roots; common prominent clay films on faces of peds; slightly effervescent; many coarse and medium soft masses of calcium carbonate; strongly alkaline; clear wavy boundary.

Bkny1—15 to 24 inches; brown (10YR 5/3) silty clay loam, dark brown (10YR 4/3) moist; weak medium and fine subangular blocky structure; hard, firm, sticky and plastic; few fine roots; strongly effervescent; common medium soft masses of calcium carbonate; strongly alkaline; clear wavy boundary.

Bkny2—24 to 44 inches; brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; massive; hard, firm, sticky and plastic; few fine roots; strongly effervescent; few medium and common fine filaments and soft masses of calcium carbonate and gypsum; strongly alkaline; clear wavy boundary.

C—44 to 60 inches; light olive brown (2.5Y 5/4) clay loam, olive brown (2.5Y 4/4) moist; massive; hard, firm, sticky and plastic; few fine roots; strongly effervescent; calcium carbonate disseminated; strongly alkaline.

Range in Characteristics:

Depth to the base of the natric horizon: 10 to 30 inches
Depth to an effervescent horizon: 0 to 19 inches

E horizon:
Reaction: neutral to moderately alkaline
Electrical Conductivity: 0 to 2 millimhos per centimeter

Btn horizon:
Texture: clay, clay loam, or silty clay loam
Reaction: strongly or very strongly alkaline
Sodium Adsorption Ratio: 15 to 30
Electrical Conductivity: 8 to 16 millimhos per centimeter

Btkn horizon:
Texture: clay, clay loam, or silty clay loam
Reaction: strongly or very strongly alkaline
Sodium Adsorption Ratio: 15 to 30
Electrical Conductivity: 8 to 16 millimhos per centimeter

Bkny horizon:
Texture: silty clay, clay, clay loam, or silty clay loam
Reaction: moderately to very strongly alkaline
Sodium Adsorption Ratio: 10 to 30
Electrical Conductivity: 8 to 16 millimhos per centimeter

Arwite Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium and/or eolian deposits
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs

Typical pedon: Arwite fine sandy loam in an area of Arwite-Elwop fine sandy loams, 6 to 15 percent slope; about 1,800 feet west and 1,200 feet south of the northeast corner of sec. 13, T. 56 N., R. 74 W.; USGS topoquadrangle Homestead Draw, SW, Wyoming, latitude 44 degrees 50 minutes 11 seconds north; longitude 105 degrees 42 minutes 16 seconds west.

A—0 to 5 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic, many fine and very fine roots throughout; common fine interstitial pores throughout; neutral (pH 7.0); clear smooth boundary.

Bt1—5 to 14 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; hard, firm, moderately sticky and moderately slightly plastic; common distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; many fine and very fine roots throughout; common fine tubular pores throughout; neutral (pH 7.2); clear wavy boundary.

Bt2—14 to 24 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; hard, firm, moderately sticky and moderately plastic; common distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; many fine and very fine roots throughout; common fine tubular pores throughout; neutral (pH 7.2); gradual wavy boundary.

Btk—24 to 32 inches; light olive brown (2.5Y 5/3) sandy clay loam, brown (10YR 4/3) moist; moderate medium angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many distinct discontinuous brown (10YR 4/3) clay films on faces of peds; common fine and very fine roots throughout; common fine tubular pores throughout; few fine light gray (10YR 7/2) irregular carbonate threads throughout; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk1—32 to 45 inches; light olive brown (2.5Y 5/3) fine sandy loam, olive brown (2.5Y 4/3) moist; moderate medium angular blocky structure; slightly hard, friable, nonsticky and nonplastic; common fine and very fine roots throughout; common fine vesicular pores throughout; few fine light gray (10YR 7/2) irregular carbonate threads throughout; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bk2—45 to 60 inches; light olive brown (2.5Y 5/3) fine sandy loam, olive brown (2.5Y 4/3) moist; weak fine and medium angular blocky structure; slightly hard, friable; few fine and very fine roots throughout; few fine vesicular pores throughout; few fine light gray (10YR 7/2) irregular carbonate threads throughout; carbonates are disseminated throughout; slightly effervescent; moderately alkaline (pH 8.0).

Range in Characteristics:

Depth to an effervescent horizon: 25 to 60 inches or more

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:

Reaction: neutral or slightly alkaline

Bk horizon:
Texture: fine sandy loam or sandy loam
Reaction: slightly or moderately alkaline

Ashollow Series

Depth class: Very deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium and/or eolian
Elevation: 3,500 to 5,200 feet
Precipitation: 15 to 17 inches
Slope: 3 to 20 percent

Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents

Typical pedon: Ashollow fine sandy loam, in an area of Pitchdraw-Ashollow-Mittenbutte fine sandy loams, 3 to 20 percent slopes, about 700 feet west and 2,300 feet south of the northeast corner of sec. 28, T. 55 N., R. 73 W.; USGS Recluse, WY topographic quadrangle; latitude 44 degrees 42 minutes 51 seconds north; longitude 105 degrees 38 minutes 29 seconds west.

A—0 to 5 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; loose, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; common fine pores; slightly effervescent; carbonates are disseminated throughout, slightly alkaline; clear smooth boundary.

C1—5 to 28 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak fine and medium angular blocky structure; loose, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; many fine pores; strongly effervescent; carbonates are disseminated throughout, moderately alkaline; gradual wavy boundary.

C2—28 to 60 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; massive; loose, very friable, nonsticky and nonplastic; common very fine and fine roots throughout; common fine pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; carbonates disseminated throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 10 inches

A horizon:
Reaction: slightly or moderately alkaline

C horizon:
Texture: fine sandy loam, sandy loam, or loamy fine sand
Reaction: slightly or moderately alkaline

Bidman Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, ridges, and stream terraces
Parent material: Alluvium
Elevation: 3,500 to 5,000 feet
Precipitation: 10 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine, smectitic, mesic Ustic Paleargids

Typical pedon: Bidman loam, about 330 feet east and 250 feet south of the northwest corner of sec. 1, T. 43 N., R. 76 W.; Southern Campbell County

E—0 to 2 inches; light brownish gray (10YR 6/2) loam, brown (10YR 4/3) moist; weak medium platy structure parting to weak medium granular; soft, very friable, slightly sticky and slightly plastic; noneffervescent; neutral; abrupt smooth boundary.

Bt—2 to 21 inches; brown (10YR 5/3) clay, brown (10YR 4/3) moist; strong medium prismatic structure parting to moderate medium angular blocky; slightly hard, very friable, moderately sticky and moderately plastic; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; noneffervescent; slightly alkaline; clear wavy boundary.

Btk—21 to 28 inches; light brownish gray (2.5Y 6/2) clay, grayish brown (2.5Y 5/2) moist; strong coarse prismatic structure parting to moderate medium angular blocky; slightly hard, friable, moderately sticky and moderately plastic; few distinct discontinuous dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine irregular light gray (10YR 7/2) carbonate threads throughout; violently effervescent; moderately alkaline; gradual wavy boundary.

Bk1—28 to 48 inches; grayish brown (2.5Y 5/2) clay loam, dark grayish brown (2.5Y 4/2) moist; moderate coarse angular blocky structure; extremely hard, very firm, moderately sticky and moderately plastic; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bk2—48 to 60 inches; grayish brown (2.5Y 5/2) clay loam, dark grayish brown (2.5Y 4/2) moist; moderate fine and medium angular blocky structure; extremely hard, very firm, moderately sticky and moderately plastic; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 8 to 27 inches
Note: The Bidman soil in detailed map unit 155 is outside the range of the characteristics of the Bidman series as it has saline and sodic properties.

E horizon:
Texture: fine sandy loam or loam
Reaction: slightly acid to slightly alkaline

Bt horizon:
Texture: clay, clay loam, silty clay, or silty clay loam
Reaction: commonly neutral or slightly alkaline, but moderately alkaline in detailed map unit 155
Sodium Adsorption Ratio: commonly 0 to 3, but 2 to 10 in detailed map unit 155
Electrical Conductivity: commonly 0 to 2 mmhos, but 4 to 8 mmhos in detailed map unit 155

Bk horizon:
Texture: loam, clay loam, clay, or loam
Reaction: moderately or strongly alkaline
Sodium Adsorption Ratio: Commonly 0 to 3, but 2 to 13 in detailed map unit 155
Electrical Conductivity: Commonly 0 to 2 mmhos, but 8 to 16 mmhos in detailed map unit 155

Bigsandy Series

Depth class: Very deep
Drainage class: Poorly drained
Landform: Flood plains
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 3 percent
Flooding: Occasional flooding for very brief periods
Water table: 0 to 1.5 feet from April to June; 2 to 5 feet other months

Taxonomic class: Fine-loamy, mixed, superactive, calcareous, frigid Typic Fluvaquents

Typical pedon: Bigsandy loam, in an area of Havre-Bigsandy loams, 0 to 3 percent slopes; about 100 feet south and 600 feet east of the northwest corner of sec. 31, T. 58 N., R. 73 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 58 minutes 27 seconds north; longitude 105 degrees 41 minutes 33 seconds west.

A—0 to 3 inches; light brownish gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) moist; weak thin platy structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and common medium roots throughout; many fine low continuity vesicular pores; noneffervescent; slightly alkaline; clear smooth boundary.

Cg1—3 to 10 inches; light brownish gray (2.5Y 6/2) loam, stratified with silty clay loam, dark grayish brown (2.5Y 4/2) moist; common fine distinct yellowish brown (10YR 5/6) redox concentrations; massive; slightly hard, friable, moderately sticky and moderately plastic; many fine and common medium roots throughout; many fine low continuity pores; carbonates are disseminated throughout; slightly effervescent; moderately alkaline; gradual wavy boundary.

Cg2—10 to 60 inches; grayish brown (2.5Y 5/2) loam, stratified with silty clay loam, silt loam, and fine sandy loam, dark grayish brown (2.5Y 4/2) moist; common fine distinct yellowish brown (10YR 5/6) redox concentrations; common fine and medium distinct gray (2.5Y 6/1) redox depletions; massive; slightly hard, friable, moderately sticky and moderately plastic; common fine and medium roots throughout; common fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Redox features: Abundance—none to few
Reaction: slightly or moderately alkaline
Electrical Conductivity: 2 to 4 millimhos per centimeter

Cg horizon:
Redox features: Abundance—common or many
Texture: dominantly loam stratified with thin layers of fine sandy loam, silty clay loam, clay loam, sandy loam, or silt loam
Reaction: moderately or strongly alkaline
Sodium Adsorption Ratio: 0 to 5
Electrical Conductivity: 4 to 8 millimhos per centimeter

Blacksheep Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Residuum and alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 3 to 45 percent

Taxonomic class: Loamy, mixed, superactive, calcareous, frigid, shallow Aridic Ustorthents

Typical pedon: Blacksheep fine sandy loam, in an area Kirby-Cabbart-Blacksheep complex, wooded, 6 to 45 percent slopes; about 2,400 feet west and 1,110 feet north of the southeast corner of sec. 24, T. 57 N., R. 74 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 54 minutes 15 seconds north; longitude 105 degrees 42 minutes 17 seconds west.

A—0 to 3 inches; brown (10YR 4/3) fine sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; loose, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; common fine low continuity vesicular pores; carbonates are disseminated throughout; slightly effervescent; moderately alkaline; clear smooth boundary.

Bk—3 to 15 inches; light yellowish brown (10YR 6/4) fine sandy loam, yellowish brown (10YR 5/4) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots throughout; common fine low continuity pores; carbonates are disseminated throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Cr—15 to 60 inches; soft bedrock.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 6 inches
Depth to bedrock: from 10 to 20 inches
Rock fragments: 0 to 5 percent

A horizon:
Reaction: slightly or moderately alkaline

Bk horizon:
Texture: fine sandy loam, very fine sandy loam, or sandy loam

Bonfri Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 20 percent

Taxonomic class: Fine-loamy, mixed, superactive, frigid Aridic Haplustalfs

Typical pedon: Bonfri loam, in an area of Foreleft-Bonfri loams, 3 to 15 percent slopes; about 600 feet west and 2,500 feet south of the northeast corner of sec. 31, T. 58 N., R. 73 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 58 minutes 3 seconds north; longitude 105 degrees 40 minutes 36 seconds west.

A—0 to 4 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak fine and medium angular blocky structure parting to weak fine granular; slightly hard, very friable, slightly sticky and slightly plastic; common fine roots throughout; many fine low continuity vesicular pores; noneffervescent; neutral; clear smooth boundary.

Bt—4 to 17 inches; brown (10YR 4/3) clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; slightly hard, friable, moderately sticky and moderately plastic; common fine roots throughout; many fine low continuity pores; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; noneffervescent; slightly alkaline; gradual wavy boundary.

Btk—17 to 22 inches; light olive brown (2.5Y 5/3) clay loam, olive brown (2.5Y 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; slightly hard, friable, moderately sticky and moderately plastic; common fine roots throughout; many fine low continuity pores; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk—22 to 32 inches; light olive brown (2.5Y 5/3) loam, olive brown (2.5Y 4/3) moist; moderate fine and medium angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots throughout; many fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear smooth boundary.

Cr—32 to 60 inches; soft calcareous bedrock.

Range in Characteristics:

Depth to bedrock: 20 to 40 inches
Depth to an effervescent horizon: 13 to 30 inches

A horizon:
Texture: fine sandy loam or loam
Reaction: neutral to slightly alkaline

Bt horizon:
Texture: loam, clay loam, or sandy clay loam
Reaction: neutral to slightly alkaline

Bk horizons:
Texture: clay loam, loam, sandy clay loam, fine sandy loam, or sandy loam
Reaction: slightly or moderately alkaline

Bonfri Series, deep phase

Depth class: Deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, ridges, and hills
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, frigid Aridic Haplustalfs

Typical pedon: Bonfri, deep fine sandy loam, in an area of Bonfri, deep-Bonfri fine sandy loams, 0 to 6 percent slopes; about 1,700 feet west and 1,000 feet north of the southeast corner of sec. 23, T. 58 N., R. 74 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 59 minutes 25 seconds north; longitude 105 degrees 43 minutes 19 seconds west.

A—0 to 6 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure parting to weak fine granular; slightly hard, very friable, nonsticky and nonplastic; noneffervescent; neutral; clear smooth boundary.

Bt—6 to 19 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; hard, friable, slightly sticky and slightly plastic; few distinct discontinuous dark yellowish brown (10YR 3/4) clay films on faces of peds; noneffervescent; slightly alkaline; clear wavy boundary.

Bk1—19 to 34 inches; light olive brown (2.5Y 5/3) sandy clay loam, olive brown (2.5Y 4/3) moist; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common fine irregular light gray

(10YR 7/2) carbonate threads throughout; strongly effervescent; 3 percent rounded sandstone gravel; moderately alkaline; clear smooth boundary.

Bk2—34 to 54 inches; light olive brown (2.5Y 5/3) fine sandy loam, olive brown (2.5Y 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; carbonates are disseminated throughout; strongly effervescent; 3 percent rounded sandstone gravel; moderately alkaline.

Cr—54 to 60 inches; soft calcareous sandstone.

Range in Characteristics:

Depth to an effervescent horizon: 25 to 60 inches or more
Rock fragments: 0 to 5 percent
Depth to bedrock: 50 to 60 inches

A horizon:
Reaction: neutral to slightly alkaline

Bt horizon:
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: fine sandy loam, sandy loam, or sandy clay loam
Reaction: slightly or moderately alkaline

Boruff Series

Depth class: Very deep
Drainage class: Poorly drained
Landform: Flood plains
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 17 inches
Slope: 0 to 3 percent
Flooding: Occasional flooding for very brief periods
Water table: 0.5 to 1.5 feet in April through June; 2 to 5 feet in other months

Taxonomic class: Fine, smectitic, calcareous, mesic Vertic Fluvaquents

Typical pedon: Boruff silty clay in an area of Haverdad-Boruff complex, 0 to 3 percent slope; about 900 feet east and 2,300 feet north of the southwest corner of sec. 9, T. 75 N., R. 55 W.; USGS Kline Draw, WY topographic quadrangle; latitude 44 degrees 45 minutes 23 seconds north; longitude 105 degrees 54 minutes 1 second west.

A—0 to 2 inches; olive brown (2.5Y 4/3) silty clay, dark olive brown (2.5Y 3/3) moist; common fine distinct dark yellowish brown (10YR 4/6) redoximorphic concentrations; moderate fine and medium granular structure; slightly hard, friable, moderately sticky and moderately plastic; many very fine and common medium roots throughout; many fine pores; slightly effervescent; slightly alkaline; EC of 3.5; abrupt smooth boundary.

C1—2 to 6 inches; stratified light yellowish brown (2.5Y 6/3) silty clay, light olive brown (2.5Y 5/3) and olive brown (2.5Y 4/3) moist; common fine distinct gray

(N 6/0) redoximorphic depletions; common fine prominent dark yellowish brown (10YR 4/6) redoximorphic concentrations; moderate coarse prismatic structure parting to moderate medium subangular blocky; hard, firm, very sticky and very plastic; common very fine and medium roots throughout; many fine pores; few distinct discontinuous dark brown (10YR 3/3) organic coats in root channels and/or pores; common fine irregular white (10YR 8/1) nests of gypsum throughout; slightly effervescent; moderately alkaline; EC of 5; abrupt wavy boundary.

C2—6 to 46 inches; grayish brown (2.5Y 5/2) silty clay, dark grayish brown (2.5Y 4/2) moist, stratified with thin layers of silty clay loam, clay loam, silt loam and fine sandy loam; many fine distinct gray (N 5/0) redoximorphic depletions; many fine prominent strong brown (7.5YR 4/6) redoximorphic concentrations; massive; hard, friable, slightly sticky and moderately plastic; common very fine roots throughout; many fine pores; few fine rounded white (10YR 8/1) nests of gypsum throughout; slightly effervescent; moderately alkaline; EC of 6; clear wavy boundary.

C3—46 to 60 inches; light brownish gray (2.5Y 6/2) silty clay, grayish brown (2.5Y 5/2) moist, stratified with thin layers of silty clay loam, clay loam, silt loam and fine sandy loam; many fine and medium distinct gray (N 5/0) redoximorphic depletions; many fine and medium distinct light olive brown (2.5Y 5/6) and common fine prominent dark yellowish brown (10YR 4/6) redoximorphic concentrations; massive; hard, friable, moderately sticky and moderately plastic; common very fine roots throughout; many fine pores; few fine rounded white (10YR 8/1) nests of gypsum throughout; slightly effervescent; EC of 5.5; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 10 inches
Note: Redoximorphic depletions and concentrations are common in the upper 18 inches.

A horizon:
Reaction: neutral to moderately alkaline
Sodium Adsorption Ratio: 0 to 5
Electrical Conductivity: 2 to 4 millimhos per centimeter

C horizon:
Texture: dominantly silty clay, silty clay loam, clay loam but stratified with many thin layers of very fine sandy loam, fine sandy loam, sandy loam, loam, silt loam, or loamy fine sand
Reaction: slightly to strongly alkaline
Sodium Adsorption Ratio: 2 to 13
Electrical Conductivity: 4 to 8 millimhos per centimeter

Bowbac Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium and/or eolian deposits over residuum
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 14 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

Typical pedon: Bowbac fine sandy loam, 1,250 feet north and 1,350 feet west of the southeast corner of sec. 23, T. 42 N., R. 72 W.; latitude 43 degrees 35 minutes 45 seconds north; longitude 105 degrees 28 minutes 5 seconds west; Southern Campbell County

A—0 to 3 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak fine and very fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and very fine roots; neutral (pH 6.8); abrupt wavy boundary.

Bt1—3 to 25 inches; yellowish brown (10YR 5/4) sandy clay loam, brown (10YR 4/3) moist; moderate coarse and medium prismatic structure parting to moderate medium and coarse angular blocky; hard, friable, slightly sticky and moderately plastic; common fine and very fine, few medium and coarse roots; many distinct clay films on faces of peds; neutral (pH 7.2); clear wavy boundary.

Bt2—25 to 31 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium fine and very fine roots; common distinct clay films on faces of peds; slightly alkaline (pH 7.6); clear wavy boundary.

Bk—31 to 39 inches; very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; massive; soft, friable, slightly plastic; few medium, fine, and very fine roots; calcium carbonate as few fine and medium soft masses; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Cr—39 inches; slightly hard, slightly effervescent, argillaceous sandstone.

Range in Characteristics:

Depth to an effervescent horizon: 10 to 35 inches
Depth to paralithic contact: 20 to 40 inches

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Reaction: neutral to moderately alkaline

Bk horizon:
Texture: fine sandy loam or sandy loam
Reaction: moderately or strongly alkaline

Brislawn Series

Depth class: Very deep
Drainage class: Well drained
Landform: Plateaus and ridges
Parent material: Alluvium and eolian deposits over residuum derived from weathered porcelanite
Elevation: 3,500 to 4,800 feet

Precipitation: 15 to 17 inches
Slope: 0 to 10 percent

Taxonomic class: Fine, smectitic, mesic Aridic Paleustalfs

Typical pedon: Brislawn loam in an area of Brislawn-Rockybutte-Ironbutte complex, 0 to 10 percent slopes; about 1,100 feet east and 400 feet south of the northwest corner of sec. 18, T. 56 N., R. 71 W.; USGS Rocky Butte SW, WY topographic quadrangle; latitude 44 degrees 50 minutes 35 seconds north; longitude 105 degrees 26 minutes 56 seconds west.

E—0 to 6 inches; brown (7.5YR 5/3) loam, dark brown (7.5YR 3/3) moist; weak thin platy structure parting to weak fine granular; soft, friable, slightly sticky and slightly plastic; common very fine and fine roots throughout; common fine pores; 2 percent subangular porcelanite channery fragments; neutral (pH 6.6); abrupt smooth boundary.

Bt1—6 to 14 inches; reddish brown (5YR 4/4) clay, dark reddish brown (5YR 3/4) moist; strong medium and coarse prismatic structure parting to strong fine and medium angular blocky; hard, firm, very sticky and very plastic; common very fine and fine roots throughout; common fine pore; many distinct discontinuous dark reddish brown (5YR 3/3) clay films on faces of peds; 5 percent subangular porcelanite channery fragments; neutral (pH 7.2); clear wavy boundary.

Bt2—14 to 21 inches; brown (7.5YR 4/3) clay, dark brown (7.5YR 3/3) moist; strong medium and coarse prismatic structure parting to moderate fine and medium blocky; hard, firm, very sticky and very plastic; common very fine and fine roots throughout; common fine pores; many distinct discontinuous dark brown (7.5YR 3/2) clay films on faces of peds; 5 percent subangular porcelanite channery fragments; slightly alkaline (pH 7.6); clear wavy boundary.

2Btk—21 to 31 inches; brown (7.5YR 4/4) channery clay loam, dark brown (7.5YR 3/4) moist; moderate fine and medium angular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine and fine roots throughout; common fine pores; common distinct discontinuous dark brown (7.5YR 3/3) clay films on faces of peds; few fine irregular light gray (10YR 7/2) carbonate threads throughout; 15 percent subangular porcelanite channery fragments; strongly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary.

2Bk—31 to 37 inches; brown (7.5YR 5/4) very channery clay loam, brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; few very fine and fine roots throughout; few fine pores; few distinct discontinuous light gray (10YR 7/2) carbonate coats on bottom surfaces of rock fragments; few fine irregular light gray (10YR 7/2) carbonate threads; carbonates disseminated throughout; strongly effervescent; 40 percent subangular porcelanite channery fragments; moderately alkaline (pH 8.2); clear wavy boundary.

3C—37 to 60 inches; fractured porcelanite with 8 percent interstices or voids filled with light brown (7.5YR 6/4) sandy loam, brown (7.5YR 5/4) moist; common distinct discontinuous light gray (10YR 7/2) carbonate coats on bottom surfaces of rock fragments; slightly effervescent, fine earth material has variable effervescence; 70 percent subangular porcelanite channery fragments, 17 percent subangular flagstones and 5 percent subrounded stones; slightly alkaline.

Range in Characteristics:

Depth to 3C horizon: 20 to 40 inches
Depth to an effervescent horizon: 15 to 28 inches

E horizon:
Rock fragments range from 0 to 14 percent
Reaction: slight acid or neutral

Bt horizon:
Texture: clay or clay loam
Reaction: neutral or slightly alkaline
Rock fragments: 0 to 14 percent porcelanite channery fragments

2Bk horizon:
Texture: channery clay, channery clay loam, very channery loam, or very channery clay loam
Reaction: slightly or strongly alkaline
Rock fragments: 25 to 65 percent porcelanite channery fragments, and 0 to 10 percent flagstones

3C horizon:
Texture: fractured porcelanite with less than 10 percent of interstices or voids filled with loam, sandy loam or loamy sand
Reaction: slightly acid to slightly alkaline
Rock fragments: 60 to 95 percent are channery fragments, 0 to 15 percent flagstones, and 0 to 5 percent stones

Cabbart Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 3 to 60 percent

Taxonomic class: Loamy, mixed, superactive, calcareous, frigid, shallow Aridic Ustorthents

Typical pedon: Cabbart loam, in an area of Cabbart-Volborg-Badland complex, wooded, 3 to 60 percent slopes; about 700 feet east and 300 feet north of the southwest corner of sec. 5, T. 57 N., R. 73 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 56 minutes 45 seconds north; longitude 105 degrees 40 minutes 19 seconds west

A—0 to 3 inches; light olive brown (2.5Y 5/3) loam, olive brown (2.5Y 4/3) moist; weak fine granular structure; soft, friable, moderately sticky and moderately plastic; common fine roots throughout; common fine low continuity vesicular pores; carbonates are disseminated throughout; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk—3 to 15 inches; light yellowish brown (2.5Y 6/3) loam, light olive brown (2.5Y 5/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; many fine roots throughout; many fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; abrupt wavy boundary.

Cr—15 to 60 inches; soft calcareous bedrock.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 4 inches
Depth to bedrock: 8 to 20 inches

A horizon:
Reaction: slightly or moderately alkaline

Bk horizon:
Texture: loam or clay loam
Reaction: slightly or moderately alkaline
Rock fragments: 0 to 10 percent

Cambria Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

Typical pedon: Cambria loam, about 2,100 feet west and 2,100 feet north of the southeast corner of sec. 22, T. 56 N., R. 76 W.; latitude 44 degrees 48 minutes 00 seconds north; longitude 105 degrees 59 minutes 55 seconds west

A—0 to 2 inches; light grayish brown (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure parting to weak very fine granular; slightly hard, friable, nonsticky and nonplastic; neutral (pH 6.8); clear smooth boundary.

Bt—2 to 8 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, friable, moderately sticky and moderately plastic; common distinct dark brown (10YR 3/3) clay films on faces of peds; neutral (pH 7.2); gradual wavy boundary.

Bk1—8 to 42 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

Bk—42 to 60 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline (pH 8.4).

Range in Characteristics:

Depth to an effervescent horizon: 3 to 12 inches

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: loam, clay loam, or silty clay loam
Reaction: neutral to moderately alkaline

Bk horizon:
Texture: loam, clay loam, or silty clay loam
Reaction: moderately or strongly alkaline

Cedar Butte Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, stream terraces, and fan remnants
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 6 percent

Taxonomic class: Fine, smectitic, mesic Torrertic Natrustalfs

Typical pedon: Cedar Butte very fine sandy loam on rangeland; about 1,700 feet north and 300 feet east of the southwest corner of sec. 26, T. 50 N., R. 69 W.; USGS Rozet SE, WY topographic quadrangle; latitude 44 degrees 17 minutes 0 seconds north; longitude 105 degrees 7 minutes 30 seconds west

E—0 to 7 inches; pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; moderate fine and medium granular structure; soft, very friable, nonsticky and nonplastic; many fine and medium and common coarse roots throughout; noneffervescent; slightly acid; abrupt smooth boundary.

Btn—7 to 15 inches; grayish brown (10YR 5/2) silty clay loam, dark grayish brown (10YR 4/2) moist; strong medium and coarse columnar structure parting to strong fine and medium angular blocky; extremely hard, very firm, moderately sticky and moderately plastic; many fine and common medium and coarse roots throughout; common distinct continuous very dark grayish brown (10YR 3/2) clay films on faces of peds; noneffervescent; moderately alkaline; clear smooth boundary.

Btkny—15 to 26 inches; light brownish gray (10YR 6/2) silty clay, grayish brown (10YR 5/2) moist; strong medium and coarse prismatic structure parting to moderate medium angular blocky; extremely hard, very firm, moderately sticky and moderately plastic; common fine and medium roots throughout; common distinct continuous dark grayish brown (10YR 4/2) clay films on faces of peds; common fine irregular light gray (10YR 7/2) carbonate threads throughout;

common fine rounded white (10YR 8/1) salt masses throughout; common fine irregular white (10YR 8/1) gypsum crystals throughout; slightly effervescent; 1 percent rounded mixed gravel; moderately alkaline; clear smooth boundary.

Bkny1—26 to 50 inches; light brownish gray (10YR 6/2) silty clay, grayish brown (10YR 5/2) moist; strong medium and coarse prismatic structure parting to moderate fine and medium angular blocky; extremely hard, very firm, moderately sticky and moderately plastic; common fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; common fine rounded white (10YR 8/1) salt masses throughout; common fine irregular white (10YR 8/1) masses of gypsum throughout; strongly effervescent; 1 percent rounded mixed gravel; moderately alkaline; clear wavy boundary.

Bkny2—50 to 60 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; moderate medium and coarse prismatic structure parting to moderate fine and medium angular blocky; hard, firm, moderately sticky and moderately plastic; common fine irregular light gray (10YR 7/2) carbonate threads throughout; common fine rounded white (10YR 8/1) salt masses throughout; common fine irregular white (10YR 8/1) masses of gypsum throughout; strongly effervescent; 1 percent rounded mixed gravel; moderately alkaline.

Range in Characteristics:

Depth to the natric horizon: 4 to 15 inches
Depth to an effervescent horizon: 10 to 24 inches

E horizon:
Texture: very fine sandy loam or silt loam
Reaction: slightly acid to slightly alkaline

Btn horizon:
Texture: clay, silty clay, or silty clay loam
Reaction: slightly to strongly alkaline
Sodium Adsorption Ratio: 5 to 20
Electrical Conductivity: 4 to 8 mmhos

Btkny horizon:
Texture: silty clay loam, clay, silty clay, clay loam
Reaction: moderately to very strongly alkaline
Exchangeable sodium percent: 13 to 30 percent
Electrical Conductivity: 8 to 16 mmhos

Bk horizons:
Texture: clay, clay loam, silty clay, or silty clay loam
Reaction: moderately to very strongly alkaline
Exchangeable sodium percent: 10 to 30 percent
Electrical Conductivity: 8 to 16 mmhos

Clarkelen Series

Depth class: Very deep
Drainage class: Well drained
Landform: Flood plains or stream terraces
Parent material: Alluvium.
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 14 inches

Slope: 0 to 6 percent
Flooding: Occasional flooding for brief periods

Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torrifluvents

Typical pedon: Clarkelen fine sandy loam, in an area of Clarkelen-Draknab fine sandy loams, 0 to 3 percent slopes; about 2,100 feet west and 250 feet south of the northeast corner of sec. 6, T. 57 N., R. 75 W.; latitude 44 degrees 57 minutes 34 seconds north; longitude 105 degrees 55 minutes 38 seconds west

A—0 to 5 inch; grayish brown (10YR 5/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; calcium carbonate disseminated throughout; slightly effervescent; slightly alkaline (pH 7.8); gradual smooth boundary.

C1—5 to 60 inches; brown (10YR 5/3) fine sandy loam, stratified with loamy fine sand, very fine sandy loam and loam, brown (10YR 4/3) moist; massive; loose, very friable, calcium carbonate disseminated throughout; strongly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics:

Depth to carbonates: 0 to 8 inches

A horizon:
Reaction: neutral to moderately alkaline

C horizon:
Texture: stratified layers of loam, fine sandy loam, very fine sandy loam, or loamy fine sand; weighted average texture is commonly fine sandy loam

Coaliams Series

Depth class: Very deep
Drainage class: Well drained
Landform: Flood plains and stream terraces
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 3 percent
Flooding: Rare for very brief periods

Taxonomic class: Fine-loamy, mixed, superactive, mesic Torrifluventic Haplustolls

Typical pedon: Coaliams loam, moderately saline, 0 to 3 percent slopes, about 500 feet west and 1,000 feet north of the southeast corner of sec. 20, T. 55 N., R. 73 W.; USGS Recluse topographic quadrangle; latitude 44 degrees 43 minutes 19 seconds north; longitude 105 degrees 39 minutes 56 seconds west

A—0 to 4 inches; very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine and very fine roots throughout; common vesicular pores with low continuity throughout; noneffervescent, slightly alkaline (pH 7.4); EC 3.0; clear smooth boundary.

Byz1—4 to 11 inches; dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium angular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; many fine and very fine roots throughout; many fine irregular pores with low continuity throughout; few fine distinct white (10YR 8/1) soft masses of gypsum; few fine distinct light gray (10YR 7/2) soft masses of salts throughout; calcium carbonate disseminated; strongly effervescent; slightly alkaline (pH 7.6); EC 9.0; clear wavy boundary.

Byz2—11 to 22 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate fine and medium angular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; many fine and very fine roots throughout; many fine irregular pores with low continuity throughout; few fine distinct white (10YR 8/1) soft masses of gypsum; common fine distinct light gray (10YR 7/2) soft masses of salts throughout; strongly effervescent; calcium carbonate disseminated; slightly alkaline (pH 7.6); EC 10.0; clear wavy boundary.

Bkyz1—22 to 30 inches; light olive brown (2.5Y 5/3) loam, stratified with thin layers of fine sandy loam, clay loam, silty clay loam, and silt loam, olive brown (2.5Y 4/3) moist; massive; soft, friable, moderately sticky and moderately plastic; common fine and very fine roots throughout; common fine irregular pores with low continuity throughout; few fine distinct white (10YR 8/1) soft masses of gypsum; common fine distinct light gray (10YR 7/2) soft masses of salts throughout; calcium carbonate disseminated; strongly effervescent; moderately alkaline (pH 8.2); EC 11; clear smooth boundary.

Bkyz2—30 to 60 inches; light olive brown (2.5Y 5/3) loam, stratified with thin layers of fine sandy loam, clay loam, silty clay loam, and silt loam, olive brown (2.5Y 4/3) moist; common fine prominent light gray (2.5Y 6/1) redoximorphic depletions and common fine prominent dark yellowish brown (10YR 4/6) redoximorphic concentrations throughout; massive; soft, friable, moderately sticky and moderately plastic; common fine and very fine roots throughout; common fine irregular pores with low continuity throughout; few fine distinct white (10YR 8/1) soft masses of gypsum; common fine distinct light gray (10YR 7/2) soft masses of salts throughout; calcium carbonate disseminated; strongly effervescent; moderately alkaline (pH 8.2); EC 11.

Range in Characteristics:

Thickness of the mollic epipedon: 7 to 20 inches - The Bw horizon may be part of the mollic epipedon.
Depth to an effervescent horizon: 0 to 10 inches
Rock fragments: 0 to 5 percent

A horizon:
Reaction: slightly or moderately alkaline
Electrical Conductivity: 2 to 4 millimhos per centimeter

Byz horizon:
Texture: loam or clay loam
Reaction: slightly or moderately alkaline

Sodium Adsorption Ratio: 2 to 10
Electrical Conductivity: 8 to 16 millimhos per centimeter

Bkyz horizon:
Texture: dominantly loam or clay loam; stratified with thin layers of fine sandy loam, silt loam, or silty clay loam
Reaction: slightly or moderately alkaline
Sodium Adsorption Ratio: 2 to 10
Electrical Conductivity: 8 to 16 millimhos per centimeter

Cromack Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 3 to 20 percent

Taxonomic class: Fine, smectitic, mesic Aridic Haplustepts

Typical pedon: Cromack clay loam, in an area of Cromack-Samsil clay loams, 3 to 15 percent slopes; about 2,250 feet east and 750 feet north of the southwest corner of sec. 5, T. 56 N., R. 73 W.; USGS Homestead Draw SW, WY topographic quadrangle; latitude 44 degrees 51 minutes 30 seconds north; longitude 105 degrees 40 minutes 9 seconds west

A—0 to 6 inches; light olive brown (2.5Y 5/3) clay loam, olive brown (2.5Y 4/3) moist; moderate fine and medium subangular blocky structure parting to weak fine granular; slightly hard, friable, moderately sticky and moderately plastic; carbonates are disseminated throughout; slightly effervescent; 1 percent angular shale chips; slightly alkaline; clear smooth boundary.

Bw—6 to 14 inches; light yellowish brown (2.5Y 6/3) clay, light olive brown (2.5Y 5/3) moist; strong fine and medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; carbonates are disseminated throughout; strongly effervescent; 1 percent angular shale chips; moderately alkaline; gradual wavy boundary.

Bk—14 to 29 inches; light yellowish brown (2.5Y 6/3) clay, light olive brown (2.5Y 5/3) moist; strong medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common fine rounded light gray (10YR 7/2) masses of carbonate throughout; strongly effervescent; 1 percent angular shale chips; moderately alkaline; clear wavy boundary.

Cr—29 to 60 inches; pale yellow (2.5Y 7/3) soft calcareous shale, light yellowish brown (2.5Y 6/3) moist.

Range in Characteristics:

Depth to paralithic contact: 20 to 40 inches
Depth to calcium carbonate: 0 to 10 inches

A horizon:
Reaction: neutral to moderately alkaline

Bw horizon:
Texture: clay or clay loam
Reaction: slightly to moderately alkaline

Bk horizon:
Texture: clay or clay loam

Cushman Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

Typical pedon: Cushman loam, about 2,000 feet south and 2,050 feet west of the northeast corner of sec. 10, T. 47 N., R. 71 W.; latitude 44 degrees 4 minutes 2 seconds north; longitude 105 degrees 22 minutes 35 seconds west; Southern Campbell County

A—0 to 2 inches; grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine and very fine roots; neutral; abrupt smooth boundary.

Bt1—2 to 11 inches; brown (10YR 5/3) loam, dark grayish brown (10YR 4/2) moist; moderate medium angular blocky structure; slightly hard, friable, sticky and plastic; many fine and very fine roots; many faint clay films on faces of peds; slightly alkaline; clear smooth boundary.

Bt2—11 to 19 inches; brown (10YR 5/3) clay loam, dark grayish brown (10YR 4/2) moist; moderate medium prismatic structure parting to moderate medium angular blocky; hard, friable, sticky and plastic; common fine roots; many prominent clay films on faces of peds; slightly alkaline; clear smooth boundary.

Btk—19 to 23 inches; pale brown (10YR 6/3) clay loam, brown (10YR 4/3) moist; moderate medium angular blocky structure; hard, friable, sticky and plastic; few fine and very fine roots; few faint clay films on faces of peds; common medium irregularly shaped filaments and threads of calcium carbonate; violently effervescent; moderately alkaline; abrupt smooth boundary.

Bk—23 to 30 inches; light gray (10YR 7/2) loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine and very fine roots; common medium irregularly shaped filaments and threads of calcium carbonate; violently effervescent; moderately alkaline; abrupt smooth boundary.

Cr—30 to 60 inches; soft, effervescent shale.

Range in Characteristics:

Depth to an effervescent horizon: 10 to 26 inches

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: clay loam or loam
Reaction: slightly or moderately alkaline

Bk horizon:
Texture: loam or clay loam

Decolney Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium and/or eolian deposits
Elevation: From 3,500 to 4,500 feet
Precipitation: 10 to 14 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

Typical pedon: Decolney fine sandy loam, about 1,800 feet north and 2,300 feet west of the southeast corner of sec. 7, T. 41 N., R. 71 W.; USGS Teckla SW topographic quadrangle; latitude 43 degrees 32 minutes 20 seconds north; longitude 105 degrees 25 minutes 55 seconds west; Southern Campbell County

A—0 to 3 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and very fine roots; common fine pores; slightly alkaline (pH 7.6); abrupt smooth boundary.

Bt1—3 to 14 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate coarse prismatic structure parting to moderate coarse subangular blocky; hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; common fine pores; many faint dark brown (10YR 3/3) clay films on faces of peds and lining pores; slightly alkaline (pH 7.8) clear wavy boundary.

Bt2—14 to 22 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to weak medium and fine subangular blocky; slightly hard, friable, slightly sticky and nonplastic; few fine and very fine roots; few fine pores; few faint dark brown (10YR 3/3) clay films on faces of peds and in pores; slightly alkaline (pH 7.8); clear wavy boundary.

C1—22 to 43 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few fine and very fine roots; moderately alkaline (pH 7.9); abrupt wavy boundary.

C2—43 to 60 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; calcium carbonate disseminated; strongly effervescent; moderately alkaline (pH 8.4).

Range in Characteristics:

Depth to an effervescent horizon: greater than 40 inches

A horizon:
Texture: loamy sand or fine sandy loam
Reaction: neutral or slightly alkaline

Bt horizon:
Reaction: neutral to moderately alkaline

C horizon:
Texture: fine sandy loam, sandy loam, or sandy clay loam
Reaction: slightly or moderately alkaline

Deekay Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs

Typical pedon: Deekay loam, about 1,250 feet east and 2,220 feet north of the southwest corner of sec. 8, T. 50 N., R. 71 W.; latitude 44 degrees 19 minutes 35 seconds north; longitude 105 degrees 25 minutes 28 seconds west; Southern Campbell County

A—0 to 4 inches; grayish brown (10YR 5/2) loam, brown (10YR 4/3) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and very fine and common medium roots throughout; neutral (pH 7.0); clear wavy boundary.

Bt1—4 to 8 inches; light brownish gray (10YR 6/2) clay loam, dark grayish brown (10YR 4/2) moist; moderate fine angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine and few medium roots; few distinct discontinuous very dark grayish brown (10YR 3/2) clay films on faces of peds; neutral (pH 7.2); clear wavy boundary.

Bt2—8 to 18 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium angular blocky; slightly hard, friable, moderately sticky and moderately plastic; many fine and very fine and common medium roots; many faint and few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and lining pores; slightly alkaline (pH 7.4); clear wavy boundary.

Btk—18 to 24 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, moderately sticky and slightly plastic; many fine and very fine and common medium roots throughout; few distinct discontinuous dark brown (10YR 3/3)clay films on faces of peds and lining pores and root channels; common fine irregular light gray (10YR 7/2) threads of calcium carbonate throughout; slightly effervescent: moderately alkaline (pH 8.0); gradual wavy boundary.

Bk—24 to 60 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots throughout; many fine light gray (10YR 7/2) threads of calcium carbonate throughout; strongly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics:

Depth to an effervescent horizon: 10 to 30 inches

Bt horizon:
Texture: loam or clay loam
Reaction: neutral to moderately alkaline

Bk horizon:
Texture: loam or clay loam, but may include fine sandy loam in pedons that are stratified
Note: The Bk horizon in the Deekay soil in mapping unit 270 is stratified below a depth of 20 to 30 inches. It has many thin layers of fine sandy loam and loam.

Delpoint Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 3 to 30 percent

Taxonomic class: Fine-loamy, mixed, superactive, frigid Aridic Haplustepts

Typical pedon: Delpoint loam, in an area of Delpoint-Cabbart loams, 6 to 30 percent slopes; about 200 feet west and 100 feet south of the northeast corner of sec. 7, T. 57 N., R. 73 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 56 minutes 43 seconds north; longitude 105 degrees 40 minutes 29 seconds west

A—0 to 4 inches; light olive brown (2.5Y 5/3) loam, olive brown (2.5Y 4/3) moist; weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots throughout; common fine low continuity vesicular pores; carbonates are disseminated throughout; slightly effervescent; slightly alkaline; clear smooth boundary.

Bw—4 to 17 inches; light olive brown (2.5Y 5/3) clay loam, olive brown (2.5Y 4/3) moist; moderate fine and medium angular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; many fine roots throughout; many fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bk—17 to 33 inches; light olive brown (2.5Y 5/3) clay loam, olive brown (2.5Y 4/3) moist; weak fine and medium angular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common fine roots throughout; common fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; abrupt wavy boundary.

Cr—33 to 60 inches; soft calcareous shale interbedded with mudstones and sandstone.

Range in Characteristics:

Depth to bedrock: 20 to 40 inches
Depth to an effervescent horizon: 0 to 5 inches

A horizon:
Reaction: slightly or moderately alkaline

Bw horizon:
Texture: loam, clay loam, or silty clay loam
Reaction: slightly or moderately alkaline

Bk horizon:
Texture: loam, clay loam, or silty clay loam

Draknab Series

Depth class: Very deep
Drainage class: Excessively drained
Landform: Flood plains and stream terraces
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 14 inches
Slope: 0 to 6 percent
Flooding: Occasional flooding for brief periods

Taxonomic class: Sandy, mixed, mesic Ustic Torrifluvents

Typical pedon: Draknab fine sandy loam, in an area of Clarkelen-Draknab fine sandy loams, 0 to 3 percent slopes; about 2,400 feet west and 600 feet north of the southeast corner of sec. 31, T. 58 N., R. 75 W.; latitude 44 degrees 57 minutes 42 seconds north; longitude 105 degrees 55 minutes 41 seconds west

A—0 to 5 inches; light grayish brown (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; carbonates are disseminated throughout; strongly effervescent; slightly alkaline (pH 7.6); clear smooth boundary.

C1—5 to 35 inches; light grayish brown (10YR 6/2) loamy fine sand, stratified with fine sand, fine sandy loam, and loam, dark grayish brown (10YR 4/2) moist; massive; loose, very friable, nonsticky and nonplastic; carbonates are disseminated throughout; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

C2—35 to 60 inches; pale brown (10YR 6/3) loamy fine sand, stratified with loamy sand, fine sandy loam, and fine sand, brown (10YR 5/3) moist; massive; loose, very friable, nonsticky and nonplastic; carbonates are disseminated throughout; strongly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics:

Depth to an effervescent horizon: 0 to 10 inches

A horizon:
Reaction: neutral or slightly alkaline

C horizon:
Texture: dominantly loamy fine sand or sand stratified with thin layers of fine sandy loam or loam
Reaction: slightly or moderately alkaline

Echeta Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine, smectitic, mesic Torrertic Haplustepts

Typical pedon: Echeta clay loam, about 340 feet east and 750 feet north of the southwest corner of sec. 1, T. 50 N., R. 73 W.; latitude 44 degrees 20 minutes 08 seconds north; longitude 105 degrees 35 minutes 20 seconds west; Southern Campbell County

A—0 to 3 inches; grayish brown (10YR 5/2) clay loam, dark grayish brown (10YR 4/2) moist; moderate medium and strong fine granular structure; slightly hard, firm, sticky and plastic; many fine and very fine and few coarse and medium roots; calcium carbonate disseminated; slightly effervescent; slightly alkaline (pH 7.4); clear smooth boundary.

Bw1—3 to 7 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate medium and fine angular blocky structure; hard, firm, sticky and plastic; common fine and very fine and few coarse and medium roots; calcium carbonate disseminated; slightly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

Bw2—7 to 15 inches; pale brown (10YR 6/3) clay, brown (10YR 5/3) moist; weak coarse prismatic structure parting to moderate coarse and medium angular blocky; very hard, very firm, very sticky and very plastic; common fine and very fine and few coarse and medium roots; calcium carbonate mostly disseminated; slightly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

Bk1—15 to 37 inches; light brownish gray (2.5Y 6/2) clay, grayish brown (2.5Y 5/2) moist; weak coarse and medium subangular blocky structure; very hard, very firm, very sticky and very plastic; few medium, fine, and very fine roots; common fine and few medium and coarse irregularly shaped filaments and soft masses of calcium carbonate; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Bk2—37 to 60 inches; light brownish gray (2.5Y 6/2) clay, dark grayish brown (2.5Y 4/2) moist; massive; very hard, firm, very sticky and very plastic; few fine and very fine roots; few medium and fine irregularly shaped soft masses of calcium carbonate; strongly effervescent, moderately alkaline (pH 8.2).

Range in Characteristics:

Depth to an effervescent horizon: 0 to 10 inches
Rock fragments: 0 to 5 percent

A horizon:
Reaction: neutral or slightly alkaline

Bw horizon:
Texture: clay loam or clay
Reaction: slightly or moderately alkaline

Bk horizon:
Texture: clay loam or clay

Elwop Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium and/or eolian deposits over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs

Typical pedon: Elwop fine sandy loam, about 500 feet west and 2,300 feet north of the southeast corner of sec. 7, T. 48 N., R. 71 W.; USGS The Gap, WY topographic quadrangle; latitude 44 degrees 9 minutes 6 seconds north; longitude 105 degrees 25 minutes 31 seconds west. Southern Campbell County

A—0 to 4 inches; yellowish brown (10YR 5/4) fine sandy loam, brown (10YR 4/3) moist; moderate fine granular structure; soft, friable, nonsticky and nonplastic; noneffervescent; neutral; clear smooth boundary.

Bt1—4 to 14 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, firm, moderately sticky and moderately plastic; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; noneffervescent; neutral; clear smooth boundary.

Bt2—14 to 24 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; weak fine and medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; noneffervescent; slightly alkaline; clear wavy boundary.

Bk—24 to 35 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; weak fine and medium subangular blocky structure; soft, friable, nonsticky and nonplastic; carbonates are disseminated throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Cr—35 to 60 inches; soft calcareous sandstone.

Range in Characteristics:

Depth to bedrock: 20 to 40 inches
Depth to an effervescent horizon: 12 to 34 inches

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: fine sandy loam or sandy loam

Fairburn Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Residuum and alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 3 to 60 percent

Taxonomic class: Loamy, mixed, superactive, calcareous, mesic, shallow Aridic Ustorthents

Typical pedon: Fairburn loam, in an area of Ucross-Iwait-Fairburn loams, 3 to 30 percent slopes; about 2,700 feet east and 2,200 feet south of the northwest corner of sec. 23, T. 56 N., R. 74 W.; USGS Homestead Draw SW, WY topographic quadrangle; latitude 44 degrees 49 minutes 10 seconds north; longitude 105 degrees 43 minutes 43 seconds west

A—0 to 4 inches; light olive brown (2.5Y 5/3) loam, olive brown (2.5Y 4/3) moist; weak fine and medium subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots throughout; common very fine and fine pores; strongly effervescent; moderately alkaline; clear wavy boundary.

C—4 to 15 inches; light olive brown (2.5Y 5/4) loam, olive brown (2.5Y 4/4) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots throughout; many very fine and fine pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; 2 percent gravel; moderately alkaline; abrupt wavy boundary.

Cr—15 to 60 inches; soft shale interbedded with mudstone and sandstone.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 4 inches
Depth to paralithic contact: 10 to 20 inches

A horizon:
Reaction: neutral to moderately alkaline

C horizon:
Texture: clay loam or loam
Reaction: slightly to moderately alkaline

Felix Series

Depth class: Very deep
Drainage class: Poorly drained
Landform: Depressions and playas
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 17 inches
Slope: 0 to 2 percent
Ponding: Occasional or frequent ponding for brief to very brief duration
Water table: 0 to 1.5 feet in April through June; 3 to 5 feet during the other months

Taxonomic class: Very-fine, smectitic, mesic Aridic Epiaquerts

Typical pedon: Felix clay, 0 to 2 percent slopes, ponded; about 2,200 feet east and 800 feet south of the northwest corner of sec. 10, T. 55 N., R. 73 W.; USGS Homestead Draw, SW WY topographic quadrangle; latitude 44 degrees 45 minutes 57 seconds north; longitude 105 degrees 37 minutes 40 seconds west

A—0 to 2 inches; dark gray (5Y 4/1) clay, gray (5Y 6/1) dry; common fine and medium prominent strong brown (7.5YR 4/6) redoximorphic concentrations; strong fine and medium angular blocky structure; very hard, very firm, very sticky and very plastic; many very fine roots throughout; common very fine tubular pores; neutral; clear wavy boundary.

BA—2 to 5 inches; very dark gray (5Y 3/1) clay, dark gray (5Y 4/1) dry (B), dark gray (5Y 4/1), gray (5Y 6/1) dry (A); common fine prominent strong brown (7.5YR 4/6) and few medium prominent brown (7.5YR 4/4) redoximorphic concentrations; strong medium prismatic structure parting to strong fine and medium angular blocky; very hard, very firm, very sticky and very plastic; common very fine and fine roots throughout; common very fine tubular pores; few distinct discontinuous gray (5Y 6/1) skeletans on faces of peds; neutral.

Bss1—5 to 20 inches; very dark gray (5Y 3/1) clay, dark gray (5Y 4/1) dry; common fine prominent strong brown (7.5YR 4/6) redoximorphic concentrations; strong coarse prismatic structure parting to strong fine and medium angular blocky; very hard, very firm, very sticky and very plastic; common very fine and fine roots throughout; common very fine tubular pores; few distinct continuous black (5Y 2/1) intersecting slickensides throughout; neutral; clear wavy boundary.

Bss2—20 to 30 inches; very dark gray (5Y 3/1) clay, dark gray (5Y 4/1) dry; common fine prominent brown (7.5YR 4/4) redoximorphic concentrations; strong coarse prismatic structure parting to strong fine and medium angular blocky; very hard, very firm, very sticky and very plastic; common very fine and fine roots throughout; many very fine tubular pores; few distinct discontinuous very dark gray (5Y 3/1) intersecting slickensides throughout; neutral; gradual wavy boundary.

By—30 to 50 inches; dark olive gray (5Y 3/2) clay, olive gray (5Y 4/2) dry; common fine prominent strong brown (7.5YR 5/8) redoximorphic concentrations; weak very coarse prismatic structure parting to moderate fine and medium angular blocky; hard, friable, very sticky and very plastic; common very fine and fine roots throughout; many very fine tubular pores; common fine and medium irregular light gray (10YR 7/2) masses of gypsum throughout; very slightly effervescent; moderately alkaline; clear wavy boundary.

Bky—50 to 65 inches; very dark grayish brown (2.5Y 3/2) clay, dark grayish brown (2.5Y 4/2) dry; moderate medium and coarse prismatic structure parting to moderate fine and medium angular blocky; hard, friable, very sticky and very plastic; common very fine and fine roots throughout; common very fine tubular pores; common fine irregular light gray (10YR 7/2) masses of gypsum throughout; common fine irregular white (10YR 8/1) carbonate threads throughout; slightly effervescent; moderately alkaline; clear wavy boundary.

C—65 to 80 inches; light olive brown (2.5Y 5/4) clay, light yellowish brown (2.5Y 6/4) dry; common fine prominent strong brown (7.5YR 5/6) redoximorphic concentrations and few common prominent gray (5Y 5/1) redoximorphic depletions; massive; slightly hard, friable, moderately sticky and moderately plastic; strongly effervescent; moderately alkaline; clear smooth boundary.

Cr—80 to 114 inches; gray (2.5Y 6/1) soft shale bedrock, light gray (2.5Y 7/1) dry.

Range in Characteristics:

Depth to an effervescent horizon: 27 inches or greater

A horizon:
Reaction: slightly acid to neutral

Bss horizon:
Reaction: neutral or slightly alkaline
Sodium Adsorption Ratio: 0 to 5
Electrical Conductivity: 0 to 4 millimhos per centimeter

By and Bky horizon:
Reaction: slightly or moderately alkaline
Sodium Adsorption Ratio: 0 to 10
Electrical Conductivity: 4 to 8 millimhos per centimeter

C horizon:
Reaction: slightly or moderately alkaline
Sodium Adsorption Ratio: 0 to 5
Electrical Conductivity: 2 to 4 millimhos per centimeter

Foreleft Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges

Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, frigid Aridic Haplustalfs

Typical pedon: Foreleft loam, in an area of Foreleft-Bonfri loams, 3 to 15 percent slopes; about 2,200 feet east and 2,000 feet south of the northwest corner of sec. 31, T. 58 N., R. 73 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 58 minutes 9 seconds north, longitude 105 degrees 41 minutes 11 seconds west

A—0 to 4 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak fine and medium angular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many fine roots throughout; common fine low continuity vesicular pores; noneffervescent; neutral; clear smooth boundary.

Bt—4 to 19 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, friable, moderately sticky and moderately plastic; common fine roots throughout; many fine low continuity pores; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; noneffervescent; slightly alkaline; gradual wavy boundary.

Btk—19 to 26 inches; light olive brown (2.5Y 5/3) clay loam, olive brown (2.5Y 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, friable, moderately sticky and moderately plastic; common fine roots throughout; many fine low continuity pores; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk1—26 to 37 inches; light olive brown (2.5Y 5/3) clay loam, olive brown (2.5Y 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, friable, moderately sticky and moderately plastic; common fine roots throughout; many fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk2—37 to 60 inches; light olive brown (2.5Y 5/3) loam, olive brown (2.5Y 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots throughout; common fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 11 to 19 inches

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: loam or clay loam
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: loam or clay loam

Forkwood Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

Typical pedon: Forkwood loam, 0 to 6 percent slopes; about 1,000 feet west and 2,500 feet north of the southeast corner of sec. 23, T. 46 N., R. 75 W.; latitude 44 degrees 56 minutes 50 seconds north; longitude 105 degrees, 49 minutes, 59 seconds west; Southern Campbell County

A—0 to 2 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine and very fine roots throughout; neutral; abrupt wavy boundary.

Bt1—2 to 7 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; weak medium subangular blocky structure parting to moderate fine granular; slightly hard, friable, slightly sticky and moderately plastic; common fine and very fine roots throughout; many distinct continuous dark brown (10YR 3/3) clay films on faces of peds; neutral; abrupt wavy boundary.

Bt2—7 to 16 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; strong fine prismatic structure parting to strong fine and medium angular blocky; hard, firm, moderately sticky and moderately plastic; common fine and very fine roots throughout; many distinct continuous dark brown (10YR 3/3) clay films on faces of peds; slightly alkaline; clear wavy boundary.

Btk—16 to 23 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; strong medium prismatic structure parting to strong fine and medium angular blocky; hard, firm, moderately sticky and moderately plastic; few fine and very fine roots throughout; many distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; few fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk1—23 to 41 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; moderate medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bk2—41 to 60 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots throughout;

common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 12 to 33 inches

A horizon:
Reaction: neutral to slightly alkaline

Bt horizon:
Texture: loam or clay loam
Reaction: neutral to slightly alkaline

Bk horizon:
Texture: loam or clay loam

Gateson Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium and/or eolian deposits
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 3 to 30 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs

Typical pedon: Gateson fine sandy loam in an area of Gateson-Xema-Mittenbutte fine sandy loams, wooded, 3 to 60 percent slopes; about 800 feet west and 1,850 feet north of the southeast corner of sec. 21, T. 57 N., R. 73 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 54 minutes 28 seconds north; longitude 105 degrees 38 minutes 17 seconds west

Oi—0 to 1inch; partially decomposed organic material mainly pine needles and duff.

E—1 to 3 inches; light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; loose, very friable, nonsticky and nonplastic; many very fine roots; common very fine pores; noneffervescent; slightly acid; clear smooth boundary.

E/B—3 to 9 inches; 65% light gray (10YR 7/2) fine sandy loam, grayish brown (10YR 5/2) moist (E); 35% very pale brown (10YR 7/3) fine sandy loam lamellae, brown (10YR 5/3) moist (B); weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; common very fine pores; few faint discontinuous brown (10YR 4/3) clay bridging between sand grains (B) occur as lamellae 1/8 to 1/4 inch thick; noneffervescent; slightly acid; gradual wavy boundary.

B/E—9 to 13 inches; 60% brown (7.5YR 5/3) sandy clay loam lamellae, brown (7.5YR 4/3) moist (B); 40% very pale brown (10YR 7/3) fine sandy loam, brown (10YR 5/3) moist (E); moderate fine and medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic (B); slightly hard, very friable, slightly sticky and slightly plastic (E); many very fine roots; many very fine pores; few distinct discontinuous dark brown (7.5YR 3/3) clay films on faces of peds (B) occur as lamellae 1/8 to 1/2 inch thick; noneffervescent; neutral; clear wavy boundary.

Bt—13 to 21 inches; brown (7.5YR 5/3) sandy clay loam, brown (7.5YR 4/3) moist; moderate medium and coarse prismatic structure parting to moderate fine and medium subangular blocky; hard, friable, moderately sticky and moderately plastic; many very fine roots; many very fine pores; few distinct discontinuous dark brown (7.5YR 3/3) clay films on faces of peds; few distinct discontinuous brown (10YR 5/3) skeletans over cutans on faces of peds, skeletans in the upper 2 inches; noneffervescent; neutral; clear wavy boundary.

C/B—21 to 37 inches; 70% pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist (C); 30% brown (7.5YR 5/3) sandy clay loam lamellae, brown (7.5YR 4/3) moist (B); weak fine and medium angular blocky structure (C); moderate fine and medium angular blocky structure (B); slightly hard, very friable, slightly sticky and slightly plastic (C); hard, friable, moderately sticky and moderately plastic (B); common very fine roots; common very fine pores; few distinct discontinuous dark brown (7.5YR 3/3) clay films on faces of peds (B) occur as lamella 1/8 to 2 inch thick; noneffervescent; neutral; abrupt wavy boundary.

Cr—37 to 60 inches; noncalcareous sandstone; lamella occur on top of sandstone plates.

Range in Characteristics:

Depth to the paralithic contact: 20 to 40 inches

E horizon:
Reaction: slightly acid to neutral

E/B or B/E horizons:
Texture: E part - fine sandy loam or loamy fine sand; B part - sandy clay loam, loam, or clay loam
Reaction: slightly acid to neutral.

Bt horizon:
Reaction: medium acid to neutral
Note: In some pedons, this horizon consists of many sandy clay loam lamellae and a few layers of fine sandy loam or loamy fine sand

C/B horizon:
Texture: C part - fine sandy loam or loamy fine sand; B part - sandy clay loam, clay loam, or loam
Reaction: medium acid to slightly alkaline
Note: The B part of this horizon occurs as lamella. In some pedons, the B part is absent.

Haverdad Series

Depth class: Very deep
Drainage class: Well drained and moderately well drained
Landform: Flood plains and stream terraces
Parent material: Alluvium
Elevation: 3,500 to 5,000 feet
Precipitation: 10 to 14 inches

Slope: 0 to 3 percent
Flooding: Rare to occasional flooding for very brief periods

Taxonomic class: Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torrifluvents

Typical pedon: Haverdad loam, about 50 feet east and 1,100 feet north of the southwest corner of sec. 34, T. 42 N., R. 76 W.; latitude 43 degrees 33 minutes 52 seconds north; longitude 105 degrees 59 minutes 13 seconds west; Southern Campbell County

A—0 to 4 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak platy structure parting to weak fine granular; soft, friable, nonsticky and slightly plastic; many very fine and fine and few medium roots; calcium carbonate disseminated; slightly effervescent; slightly alkaline; clear wavy boundary.

C—4 to 60 inches; pale brown (10YR 6/3) loam, stratified with thin layers of fine sandy loam, very fine sandy loam, sandy clay loam, and silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine and few medium and roots; calcium carbonate disseminated; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 8 inches

A horizon:
Texture: loam or clay loam
Reaction: neutral to moderately alkaline

C horizon:
Texture: dominantly loam or clay loam; stratified with thin layers of fine sandy loam, very fine sandy loam, silt loam, clay, or loamy fine sand
Reaction: slightly to strongly alkaline
Sodium Adsorption Ratio: 0 to 5
Electrical Conductivity: commonly 0 to 4 millimhos per centimeter, but 4 to 8 millimhos per centimeter in some pedons

Havre Series

Depth class: Very deep
Drainage class: Well drained
Landform: Flood plains and stream terraces
Parent material: Alluvium
Elevation: 3,500 to 5,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 3 percent
Flooding: Occasional flooding for very brief periods

Taxonomic class: Fine-loamy, mixed, superactive, calcareous, frigid Aridic Ustifluvents

Typical pedon: Havre loam, in an area of Havre-Bigsandy loams, 0 to 3 percent slopes; about 3,750 feet north and 300 feet east of the southwest corner of sec. 24, T. 58 N., R. 74 W.; USGS Corral Creek, WY topographic quadrangle;

latitude 44 degrees 59 minutes 59 seconds north; 105 degrees 42 minutes 50 seconds longitude west

A—0 to 6 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure parting to weak fine granular; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine roots throughout; many fine low continuity vesicular pores; noneffervescent; neutral; clear smooth boundary.

C—6 to 60 inches; light olive brown (2.5Y 5/3) loam, stratified with thin layers of silt loam, clay loam, and fine sandy loam, olive brown (2.5Y 4/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots throughout; many fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

A horizon:
Reaction: neutral to moderately alkaline

C horizon:
Texture: dominantly loam, silt loam, sandy clay loam or clay loam; stratified with thin layers of fine sandy loam, very fine sandy loam, silty clay loam, or clay loam
Reaction: slightly to moderately alkaline
Sodium Adsorption Ratio: 0 to 5
Electrical Conductivity: 4 to 8 millimhos per centimeter

Heldt Series

Depth: Very deep
Drainage class: Well drained
Landform: Fan remnants and stream terraces
Parent material: Alluvium
Elevation: 4,100 to 5,000 feet
Precipitation: 10 to 17 inches
Slope: 0 to 3 percent

Taxonomic Class: Fine, smectitic, mesic Ustertic Haplocambids.

Typical Pedonl Heldt clay loam, about 700 feet south and 1,350 feet west of the northeast corner of sec. 9, T. 42 N., R. 71 W.; latitude 43 degrees 37 minutes 58 seconds north; longitude 105 degrees 23 minutes 18 seconds west; Southern Campbell County

A—0 to 2 inches; pale brown (10YR 6/3) clay loam, dark brown (10YR 4/3) moist; moderate fine and medium granular structure; hard, firm, sticky and plastic; common fine roots; moderately alkaline; abrupt smooth boundary.

Bny1—2 to 11 inches; pale brown (10YR 6/3) clay, dark brown (10YR 4/3) moist; moderate coarse subangular blocky structure; extremely hard, very firm, very sticky and very plastic; few medium and fine roots; calcium carbonate disseminated; slightly effervescent; moderately alkaline; clear wavy boundary.

Bny2—11 to 22 inches; pale brown (10YR 6/3) clay, brown (10YR 5/3) moist; moderate coarse subangular blocky structure; extremely hard, very firm, very sticky and very plastic; few fine and medium roots; calcium carbonate disseminated; slightly effervescent; strongly alkaline; clear wavy boundary.

Bkny1—22 to 43 inches; pale brown (10YR 6/3) clay, brown (10YR 5/3) moist, moderate coarse subangular blocky structure; extremely hard, very firm, very sticky and very plastic; few fine and medium roots; many medium and fine soft masses of calcium carbonate; slightly effervescent; moderately alkaline; clear wavy boundary.

Bkny2—43 to 60 inches; pale brown (10YR 6/3) clay, brown (10YR 5/3) moist; moderate coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; few fine and medium roots; few medium and fine soft masses of calcium carbonate; slightly effervescent; moderately alkaline.

Range in Characteristics:

Note: Cracks 1/2 to 1 inch wide are present from the surface to 25 inches or more for 6 to 8 months.
Note: The Heldt soil in this soil survey area is outside the range in characteristics of the Heldt series. It has saline and sodic properties.

A horizon:
Reaction: slightly or moderately alkaline.

Bny and Bkny horizon:
Texture: clay or clay loam
Reaction: moderately or strongly alkaline
Electrical Conductivity: 8 to 16 millimhos per centimeter
Sodium adsorption ratio: 2 to 13

Hiland Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium and/or eolian deposits
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 14 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

Typical pedon: Hiland fine sandy loam, in an area of Hiland-Bowbac fine sandy loams, 6 to 15 percent slopes, about 100 feet east and 1,900 feet south of the northwest corner of sec. 35, T. 54 N., R. 76 W.; USGS Croton, WY topographic quadrangle; latitude 44 degrees 36 minutes 58 seconds north; longitude 105 degrees 58 minutes 45 seconds west

A—0 to 3 inches; grayish brown (10YR 5/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; noneffervescent; neutral; clear smooth boundary.

Bt1—3 to 16 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; moderate medium and coarse prismatic structure parting to moderate fine and medium angular blocky; slightly hard, friable, slightly sticky and slightly plastic; common distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; noneffervescent; neutral; gradual wavy boundary.

Bt2—16 to 30 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, firm, slightly sticky and slightly plastic; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; noneffervescent; neutral; clear wavy boundary.

Bk1—30 to 42 inches; light yellowish brown (2.5Y 6/3) fine sandy loam, olive brown (2.5Y 4/3) moist; weak fine and medium angular blocky structure; soft, very friable, nonsticky and nonplastic; few fine irregular light gray (10YR 7/2) carbonate threads throughout; slightly effervescent; moderately alkaline; gradual wavy boundary.

Bk2—42 to 60 inches; light yellowish brown (2.5Y 6/3) fine sandy loam, olive brown (2.5Y 4/3) moist; weak fine and medium angular blocky structure; soft, friable, nonsticky and nonplastic; few fine irregular light gray (10YR 7/2) carbonate threads throughout; slightly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 14 to 32 inches
Rock fragments: 0 to 5 percent

A horizon:
Reaction: neutral to slightly alkaline.

Bt horizon:
Reaction: neutral to slightly alkaline

Bk horizon:
Texture: sandy loam or fine sandy loam
Reaction: moderately or strongly alkaline

Hilight Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Residuum
Elevation: 3,500 to 5,200 feet
Precipitation: 15 to 17 inches
Slope: 3 to 45 percent

Taxonomic class: Clayey, smectitic, nonacid, mesic, shallow Ustic Torriorthents

Typical pedon: Hilight clay, about 950 feet east and 2,500 feet north of the southwest corner of sec. 24, T. 42 N., R. 70 W.; latitude 43 degrees 36 minutes 1 second north, longitude; 105 degrees 14 minutes 10 seconds west; Southern Campbell County

A—0 to 2 inches; grayish brown (2.5Y 5/2) clay, dark grayish brown (2/5Y 4/2) moist; moderate medium and strong fine granular structure; slightly hard, firm, sticky and plastic; common fine roots; neutral; clear wavy boundary.

C—2 to 12 inches; grayish brown (2.5Y 5/2) clay, dark grayish brown (2.5Y 4/2) moist; massive; very hard, very firm, very sticky and very plastic; few fine roots; 30 percent soft shale platelets and 5 percent hard shale channery fragments; neutral; clear wavy boundary.

Cr—12 to 60 inches; soft grayish brown to dark yellowish brown lignitic shale.

Range in Characteristics:

Depth to bedrock: 10 to 20 inches

A horizon:
Reaction: neutral to slightly alkaline

C horizon:
Texture: clay or silty clay
Reaction: neutral to slightly alkaline

Ironbutte Series

Depth class: Very deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium and/or colluvium derived from porcelanite
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 60 percent

Taxonomic class: Loamy-skeletal over fragmental, mixed, superactive, nonacid, mesic Aridic Ustorthents

Typical pedon: Ironbutte channery loam; about 660 feet north and 250 feet west of the southeast corner of sec. 19, T. 50 N., R. 71 W.; USGS Gillette East, WY topographic quadrangle; latitude 44 degrees 17 minutes 33 seconds north; longitude 105 degrees 25 minutes 47 seconds west

A—0 to 4 inches; light reddish brown (5YR 6/3) channery loam, reddish brown (5YR 4/3) moist; moderate very fine granular structure; soft, very friable, 20 percent channery fragments; slightly alkaline (pH 7.4); clear smooth boundary.

C—4 to 12 inches; light reddish brown (5YR 6/4) very channery loam, reddish brown (5YR 4/4) moist; massive; soft, very friable, 55 percent channery fragments 1/2 to 5 inches in length; slightly alkaline (pH 7.4); clear wavy boundary.

2C—12 to 60 inches; fractured porcelanite; intricacies between coarse fragments are void of fines.

Range in Characteristics:

Depth to 2C horizon: 7 to 20 inches
Depth to an effervescent horizon: 0 to 6 inches

A horizon:

Reaction: neutral or slightly alkaline

Rock fragments: 15 to 35 percent, with 0 to 5 percent flagstones and 15 to 35 percent channery fragments

C horizon:

Texture: very channery loam, extremely channery loam, very channery fine sandy loam, or extremely channery fine sandy loam

Reaction: neutral to moderately alkaline

Rock fragments: 35 to 85 percent, with 0 to 15 percent flagstones, 0 to 5 percent stones, and 35 to 80 percent channery fragments

Iwait Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, ridges, and stream terraces
Parent material: Alluvium
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 20 percent

Taxonomic class: Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents

Typical pedon: Iwait loam, in an area of Ziggy-Iwait loams, 0 to 6 percent slopes, about 1,340 feet north and 1,750 feet west of the southeast corner of sec. 5, T. 55 N., R. 72 W.; USGS Whitetail Butte topographic quadrangle; latitude 44 degrees 46 minutes 30 seconds north; longitude 105 degrees 32 minutes 24 seconds west

A—0 to 6 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; calcium carbonate disseminated; strongly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

Bk1—6 to 20 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common fine and very fine roots; common fine irregular light gray (10YR 7/2) carbonate threads throughout; common fine rounded light gray (10YR 7/2) masses of carbonate throughout; strongly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary.

Bk2—20 to 60 inches; light yellowish brown (10YR 6/4) clay loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; common fine irregular light gray (10YR 7/2) carbonate threads throughout; common fine rounded light gray (10YR 7/2) masses of carbonate throughout; strongly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics:

Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: neutral to moderately alkaline

Bk horizon:
Texture: loam or clay loam

Jaywest Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 6 percent

Taxonomic class: Fine, smectitic, mesic Aridic Paleustalfs

Typical pedon: Jaywest loam, about 450 feet west and 500 feet north of the southeast corner of sec. 4, T. 49 N., R. 73 W.; USGS Four Bar J Ranch, WY topographic quadrangle; latitude 44 degrees 14 minutes 48 seconds north; longitude 105 degrees 37 minutes 59 seconds west; Southern Campbell County

E—0 to 7 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; moderate thick platy structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine and few medium roots; neutral (pH 6.8); abrupt wavy boundary.

Bt1—7 to 12 inches; brown (10YR 5/3) clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; many very fine and fine and common medium roots throughout; few faint dark brown (10YR 3/3) clay films on faces of peds; neutral (pH 6.8); clear wavy boundary.

Bt2—12 to 27 inches; yellowish brown (10YR 5/4) clay, dark yellowish brown (10YR 4/4) moist; strong coarse prismatic structure parting to strong coarse and medium angular blocky; extremely hard, very firm, very sticky and very plastic; common very fine and fine and few medium roots; few faint dark brown (10YR 3/3) clay films on faces of peds and lining pores; neutral (pH 7.2); clear wavy boundary.

Btk—27 to 36 inches; light yellowish brown (10YR 6/4) clay, yellowish brown (10YR 5/4) moist; moderate medium and fine prismatic structure parting to strong medium angular blocky; very hard, very firm, very sticky and very plastic; few very fine, fine, and medium roots; few faint dark brown (10YR 3/3) clay films on faces of peds; common fine irregular light gray (10YR 7/2) carbonate threads; strongly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

Bk—36 to 60 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; weak coarse and medium subangular blocky structure; hard, firm, sticky and plastic; few very fine and fine roots; common fine irregular light gray (10YR 7/2) threads and common fine rounded light gray (10YR 7/2) masses of carbonate; strongly effervescent; moderately alkaline (pH 8.4).

Range in Characteristics:

Depth to an effervescent horizon: 13 to 27 inches
Note: The stratified phase of the Jaywest soil in mapping unit 292 is outside the range in characteristics of the Jaywest series. It has many stratified layers below at a depth of 20 inches.
Note: The Jaywest soil in mapping unit 293 is outside the range in characteristics of the Jaywest series. It has saline and sodic properties.

E horizon:
Texture: loam to very fine sandy loam
Reaction: slightly acid to slightly alkaline

Bt horizon:
Texture: clay or clay loam
Reaction: neutral or slightly alkaline

Btkn horizon:
Texture: clay loam or clay
Reaction: moderately or strongly alkaline
Sodium adsorption ration: 10 to 30
Electrical Conductivity: 8 to 16 millimhos per centimeter
Note: This horizon only occurs in the saline phase.

Bk horizon:
Texture: commonly loam or clay loam but in the stratified phase this layer is a 2C horizon and also contains many thin layers of fine sandy loam, loam, silt loam, and sandy clay loam
Reaction: moderately or strongly alkaline
Sodium Adsorption Ratio: 0 to 3, but 10 to 30 in the saline phase
Electrical Conductivity: 0 to 2 millimhos per centimeter, but 8 to 16 millimhos per centimeter in the saline phase

Julesburg Series

Depth class: Very deep
Drainage class: Well drained
Landform: Hills
Parent material: Eolian deposits
Elevation: 3,500 to 5,000 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Coarse-loamy, mixed, superactive, mesic Aridic Argiustolls

Typical pedon: Julesburg fine sandy loam, about 380 feet east and 420 feet north of the southwest corner of sec. 16, T 54 N., R. 70 W.; USGS Weston, WY topographic quadrangle; latitude 44 degrees 39 minutes 25 seconds north; longitude 105 degrees 17 minutes 11 seconds west

A—0 to 9 inches; brown (10YR 4/3) fine sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure parting to moderate fine granular; soft, friable, nonsticky and nonplastic; noneffervescent; neutral; clear smooth boundary.

Bt1—9 to 14 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure parting to moderate fine granular; soft, friable, nonsticky and nonplastic; few distinct discontinuous dark brown (10YR 3/3) clay bridging between sand grains; noneffervescent; neutral; clear wavy boundary.

Bt2—14 to 18 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak coarse prismatic structure parting to moderate medium and coarse subangular blocky; slightly hard, friable, slightly sticky and nonplastic; few distinct discontinuous dark brown (10YR 3/3) clay bridging between sand grains; noneffervescent; neutral; clear wavy boundary.

Bt3—18 to 24 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium and coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few distinct discontinuous dark yellowish brown (10YR 3/4) clay bridging between sand grains; noneffervescent; neutral; clear wavy boundary.

C1—24 to 35 inches; light yellowish brown (10YR 6/4) fine sandy loam, brown (10YR 5/3) moist; massive; soft, friable, nonsticky and nonplastic; noneffervescent; neutral; clear wavy boundary.

C2—35 to 60 inches; light yellowish brown (10YR 6/4) fine sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, friable, nonsticky and nonplastic; noneffervescent; neutral.

Range in Characteristics:

Thickness of the mollic epipedon: 7 to 20 inches
Depth to an effervescent horizon: 50 inches or more
Rock fragments: 0 to 5 percent

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: fine sandy loam or sandy loam
Reaction: neutral to moderately alkaline

C horizon:
Texture: fine sandy loam or sandy loam
Reaction: neutral or slightly alkaline

Keeline Series

Depth class: Very deep
Drainage class: Well or somewhat excessively drained
Landform: Hills and ridges
Parent material: Alluvium and/or eolian deposits
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 6 to 20 percent

Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents

Typical pedon: Keeline fine sandy loam, about 700 feet north and 2,000 feet east of the southwest corner of sec. 2, T. 43 N., R. 75 W.; latitude 44 degrees 43 minutes 26 seconds north; longitude 105 degrees 50 minutes 1 second west; Southern Campbell County

A—0 to 4 inches; yellowish brown (10YR 5/4) fine sandy loam, brown (10YR 4/3) moist; weak fine angular blocky structure parting to weak fine and very fine granular; soft, very friable, nonsticky and nonplastic; many fine and very fine roots; calcium carbonate disseminated; strongly effervescent, moderately alkaline; gradual wavy boundary.

C1—4 to 10 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; calcium carbonate disseminated; violently effervescent; moderately alkaline; gradual wavy boundary.

C2—10 to 60 inches; very pale brown (10YR 7/3) fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; calcium carbonate disseminated; violently effervescent; strongly alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: slightly or moderately alkaline
Texture: fine sandy loam or loamy sand

C horizon:
Texture: fine sandy loam or sandy loam

Keyner Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, and stream terraces
Parent material: Alluvium derived from sodic sandstone and shale
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 14 inches
Slope: 0 to 6 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Haplic Ustic Natrargids

Typical pedon: Keyner fine sandy loam, about 200 feet east and 400 feet south of the northwest corner of sec. 35, T. 42 N., R. 71 W.; latitude 43 degrees 34 minutes 33 seconds north; longitude 105 degrees 21 minutes 45 seconds west; Southern Campbell County

E—0 to 4 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; weak fine granular structure; soft, friable, nonsticky and nonplastic; common medium and many very fine and fine roots; slightly alkaline; clear wavy boundary.

Bt—4 to 12 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; moderate coarse columnar structure parting to moderate coarse angular blocky; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; common faint clay films on faces of peds; moderately alkaline; clear wavy boundary.

Btn—12 to 20 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; common faint clay films on faces of peds; common medium and fine filaments and soft masses of calcium sulfate; strongly alkaline; gradual wavy boundary.

Btkn—20 to 26 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; common faint clay films on faces of peds; common medium and fine seams, filaments, and soft masses of calcium carbonate; few fine soft masses and medium crystals of calcium sulfate; slightly effervescent; very strongly alkaline; gradual wavy boundary.

Bkn—26 to 48 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 5/3) moist; massive; hard, firm, slightly sticky and slightly plastic; few fine roots; common medium and fine seams and soft masses of calcium carbonate; few fine soft masses and medium crystals of calcium sulfate; slightly effervescent; very strongly alkaline; gradual wavy boundary.

C—48 to 60 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 5/3) moist; massive; hard, firm, slightly sticky and slightly plastic; few medium and fine seams and soft masses of calcium carbonate and calcium sulfate; slightly effervescent; strongly alkaline.

Range in Characteristics:

Depth to the natric horizon: 11 to 32 inches
Depth to an effervescent horizon: 11 to 32 inches

E horizon:
Electrical Conductivity: 0 to 2 millimhos per centimeter
Sodium Adsorption Ratio: 0 to 5

Bt horizon:
Texture: clay loam or sandy clay loam
Reaction: moderately alkaline
Electrical Conductivity: 0 to 2 millimhos per centimeter
Sodium Adsorption Ratio: 2 to 10

Btn horizon:
Texture: sandy clay loam or clay loam
Electrical Conductivity: 8 to 16 millimhos per centimeter
Sodium Adsorption Ratio: 10 to 30

Btkn horizon:
Texture: sandy clay loam or clay loam
Electrical Conductivity: 8 to 16 millimhos per centimeter
Sodium Adsorption Ratio: 15 to 30

Bkn horizon:
Texture: sandy clay loam, fine sandy loam, or sandy loam
Reaction: moderately to very strongly alkaline

Electrical Conductivity: 8 to 16 millimhos per centimeter
Sodium Adsorption Ratio: 15 to 30

Kirby Series

Depth class: Very deep
Drainage class: Excessively drained
Landform: Hills and ridges
Parent material: Alluvium and/or colluvium derived from porcelanite
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 2 to 45 percent

Taxonomic class: Loamy-skeletal over fragmental, mixed, superactive, calcareous, frigid Aridic Ustorthents

Typical pedon: Kirby channery loam, in an area of Kirby-Cabbart-Blacksheep complex, wooded, 6 to 45 percent slopes; about 3,000 feet east and 250 feet north of the southwest corner of sec. 34, T. 58 N., R. 72 W.; USGS Homestead Draw, WY topographic quadrangle; latitude 44 degrees 58 minutes 5 seconds north; longitude 105 degrees 30 minutes 25 seconds west

A—0 to 4 inches; brown (7.5YR 5/2) channery loam, brown (7.5YR 4/2) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; common fine low continuity vesicular pores; 20 percent porcelanite channery fragments; noneffervescent; slightly alkaline; clear smooth boundary.

Bk—4 to 17 inches; light brown (7.5YR 6/3) very channery loam, brown (7.5YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine and common medium roots throughout; common fine low continuity pores; carbonates are disseminated throughout; 45 percent porcelanite channery fragments; 5 percent porcelanite flagstones; strongly effervescent; slightly alkaline; clear wavy boundary.

2C—17 to 60 inches; fractured porcelanite.

Range in Characteristics:

Depth to the 2C horizon: 8 to 20 inches

A horizon:
Reaction: neutral or slightly alkaline
Rock fragments: 15 to 35 percent—0 to 10 percent flagstones and stones, 15 to 35 percent channery fragments

Bk horizon:
Texture: very channery loam, extremely channery loam, very channery sandy loam, or extremely channery sandy loam
Reaction: slightly or moderately alkaline
Rock fragments: 40 to 85 percent—5 to 20 percent flagstones and cobbles, 35 to 70 percent channery fragments

2C horizon:
Reaction: neutral or slightly alkaline

Kishona Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 0 to 20 percent

Taxonomic class: Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents

Typical pedon: Kishona loam, about 1,500 feet west and 2,300 feet south of the northeast corner of sec. 27, T. 42 N., R. 76 W.; latitude 43 degrees 35 minutes 2 seconds north; longitude 105 degrees 58 minutes 19 seconds west

A—0 to 4 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak medium and moderate fine granular structure; slightly hard, friable, sticky and slightly plastic; many very fine and fine roots; calcium carbonate disseminated; slightly effervescent; moderately alkaline; clear wavy boundary.

Bk1—4 to 15 inches; very pale brown (10YR 7/3) clay loam, brown (10YR 5/3) moist; weak coarse and medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common very fine and fine roots; common medium and many fine rounded soft masses of calcium carbonate; strongly effervescent; strongly alkaline; clear wavy boundary.

Bk2—15 to 60 inches; very pale brown (10YR 7/3) clay loam, brown (10YR 5/3) moist; massive; slightly hard, friable, sticky and plastic; few very fine and fine roots; few medium and common fine rounded soft masses of calcium carbonate; strongly effervescent; strongly alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 6 inches
Rock fragments: 0 to 5 percent

A horizon:
Reaction: neutral to moderately alkaline

Bk horizon:
Texture: loam, silty clay loam, or clay loam
Reaction: moderately to strongly alkaline

Klinedraw Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-silty, mixed, superactive, mesic Aridic Haplustalfs

Typical pedon: Klinedraw silt loam in an area of Oshoto-Klinedraw silt loams, 6 to 15 percent slopes; about 2,200 feet west and 1,000 feet south of the northeast corner of sec. 23, T. 55 N., R. 69 W.; USGS Brislawn School, WY topographic quadrangle; latitude 44 degrees 44 minutes 28 seconds north; longitude 105 degrees 6 minutes 49 seconds west

A—0 to 4 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak thin platy structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine and common medium roots throughout; common fine pores; neutral; clear smooth boundary.

Bt—4 to 19 inches; brown (10YR 5/3) silty clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; slightly hard, friable, moderately sticky and moderately plastic; many very fine and fine roots throughout; many fine pores; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; neutral; clear smooth boundary.

Btk—19 to 24 inches; light olive brown (2.5Y 5/3) silty clay loam, olive brown (2.5Y 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine roots throughout; many fine pores; few distinct discontinuous dark olive brown (2.5Y 3/3) clay films on faces of peds; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bk—24 to 32 inches; light olive brown (2.5Y 5/3) silt loam, olive brown (2.5Y 4/3) moist; moderate fine and medium angular blocky structure; slightly hard, very friable, moderately sticky and slightly plastic; common very fine and fine roots throughout; many fine pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Cr—32 to 60 inches; light yellowish brown (2.5Y 6/3), strongly effervescent, soft intermixed siltstone, sandstone, and shale bedrock.

Range in Characteristics:

Depth to bedrock: 20 to 40 inches
Depth to an effervescent horizon: 15 to 26 inches

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: silty clay loam or clay loam
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: silty clay loam, silt loam, clay loam, or loam

Leiter Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine, smectitic, mesic Aridic Haplustalfs

Typical pedon: Leiter clay loam, about 150 feet south and 820 feet east of the northwest corner of sec. 6, T. 50 N., R. 73 W.; latitude 44 degrees 20 minutes 48 seconds north; longitude 105 degrees 41 minutes 17 seconds west; Southern Campbell County

A—0 to 3 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; weak medium and strong fine granular structure; slightly hard, friable, sticky and plastic; many very fine and fine and few medium roots; neutral (pH 7.0); abrupt smooth boundary.

Bt1—3 to 8 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; weak medium prismatic structure parting to strong medium and fine angular blocky; hard, firm, moderately sticky and moderately plastic; many very fine, common fine, and few medium roots; few faint brown (10YR 4/3) clay films on faces of peds; neutral (pH 7.0); clear smooth boundary.

Bt2—8 to 17 inches; brown (10YR 5/3) clay, brown (10YR 4/3) moist; strong medium prismatic structure parting to strong medium angular blocky; very hard, very firm, very sticky and very plastic; common very fine and fine and few medium roots; few faint dark brown (10YR 3/3) clay films on faces of peds; slightly alkaline (pH 7.4); clear wavy boundary.

Btk—17 to 22 inches; pale brown (10YR 6/3) clay, brown (10YR 5/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; very hard, very firm, very sticky and very plastic; common very fine and fine and few medium roots; few distinct dark brown (10YR 3/3) clay films on faces of peds; common fine irregular light gray (10YR 7/2) carbonate threads; common fine rounded light gray (10YR 7/2) masses of carbonate; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Bk—22 to 33 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; weak medium and coarse subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine and fine roots; common fine and medium irregular light gray (10YR 7/2) carbonate threads; common fine rounded light gray (10YR 7/2) masses of carbonate; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Cr—33 to 60 inches; brownish yellow to grayish brown soft shale; slightly effervescent to about 50 inches and inconsistently effervescent below.

Range in Characteristics:

Depth to an effervescent horizon: 9 to 21 inches
Depth to bedrock: 20 to 40 inches

A horizon:
Reaction: neutral or slightly alkaline.

Bt horizon:
Texture: clay loam, clay, silty clay loam, or silty clay
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: clay loam or clay

Lismas Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 3 to 75 percent

Taxonomic class: Clayey, smectitic, nonacid, mesic, shallow Aridic Ustorthents

Typical pedon: Lismas clay loam, in an area of Lismas-Sabatka-Xema complex, 3 to 15 percent slopes; about 1,950 feet west and 1,500 feet south of the northeast corner of sec. 24, T. 56 N., R. 69 W.; USGS Bonnie Reservoir, WY topographic quadrangle; latitude 44 degrees 49 minutes 33 seconds north; longitude 105 degrees 4 minutes 59 seconds west

A—0 to 3 inches; olive brown (2.5Y 4/3) clay loam, dark olive brown (2.5Y 3/3) moist; moderate fine and medium angular blocky structure parting to weak fine granular; slightly hard, friable, slightly sticky and moderately plastic; many very fine and fine and common medium roots throughout; many very fine and fine pores; noneffervescent; neutral; clear wavy boundary.

C—3 to 12 inches; olive brown (2.5Y 4/3) clay, dark olive brown (2.5Y 3/3) moist; strong medium and coarse angular blocky structure; hard, friable, very sticky and very plastic; many very fine and fine roots throughout; many very fine and fine pores; very slightly effervescent; inconsistently effervescent; neutral; clear wavy boundary.

Cy—12 to 16 inches; dark olive brown (2.5Y 3/3) and olive brown (2.5Y 4/3) clay; moderate fine and medium angular blocky structure; hard, friable, moderately sticky and moderately plastic; many very fine and fine roots throughout; common very fine and fine pores; few distinct discontinuous strong brown (7.5YR 5/6) iron stains on faces of peds; common fine irregular light gray (10YR 7/2) masses of gypsum throughout; noneffervescent; 10 percent angular gravel-size shale pararock fragments; slightly alkaline; clear wavy boundary.

Cr—16 to 60 inches; non-acid shale bedrock.

Range in Characteristics:

Depth to bedrock: 6 to 20 inches

A horizon:
Reaction: moderately acid to slightly alkaline

C horizon:
Texture: clay or silty clay
Reaction: moderately acid to slightly alkaline

Megonot Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 3 to 15 percent

Taxonomic class: Fine, smectitic, frigid Torrertic Haplustepts

Typical pedon: Megonot clay loam, in an area of Megonot-Yawdim clay loams, 3 to 15 percent slopes; about 2,000 feet west and 500 feet south of the northeast corner of sec. 26, T. 58 N., R. 73 W.; USGS Homestead Draw, WY topographic quadrangle; latitude 44 degrees 59 minutes 14 seconds north; longitude 105 degrees 36 minutes 5 seconds west

A—0 to 4 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate fine and medium granular structure; hard, very firm, moderately sticky and moderately plastic; common fine roots throughout; many fine low continuity vesicular pores; noneffervescent; slightly alkaline; clear smooth boundary.

Bw—4 to 15 inches; light olive brown (2.5Y 5/3) clay, olive brown (2.5Y 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; very hard, extremely firm, very sticky and very plastic; common fine roots throughout; many fine low continuity pores; carbonates are disseminated throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk—15 to 33 inches; light yellowish brown (2.5Y 6/3) clay, light olive brown (2.5Y 5/3) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; very hard, extremely firm, very sticky and very plastic; common fine roots throughout; many fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Cr—33 to 60 inches; soft calcareous bedrock.

Range in Characteristics:

Depth to bedrock: 20 to 40 inches
Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: neutral to slightly alkaline

Bw horizon:
Texture: clay, clay loam, silty clay, or silty clay loam
Reaction: slightly or moderately alkaline

Bk horizon:
Texture: clay, clay loam, silty clay, or silty clay loam
Reaction: slightly or moderately alkaline

Mittenbutte Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 3 to 60 percent

Taxonomic class: Loamy, mixed, superactive, calcareous, mesic, shallow Aridic Ustorthents

Typical pedon: Mittenbutte fine sandy loam, about 1,200 feet east and 350 feet north of the southwest corner of sec. 22, T. 57 N., R. 73 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 54 minutes 13 seconds north; longitude 105 degrees 37 minutes 44 seconds west

A—0 to 3 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak fine granular structure; loose, very friable, nonsticky and nonplastic; strongly effervescent; about 1 percent angular sandstone gravel; slightly alkaline; gradual smooth boundary.

AC—3 to 9 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure parting to weak fine granular; loose, very friable, nonsticky and nonplastic; strongly effervescent; about 1 percent angular sandstone gravel; moderately alkaline; clear smooth boundary.

C—9 to 16 inches; light yellowish brown (2.5Y 6/3) fine sandy loam, light olive brown (2.5Y 5/3) moist; massive; loose, very friable, nonsticky and nonplastic; strongly effervescent; 1 percent angular sandstone gravel; moderately alkaline; clear wavy boundary.

Cr—16 to 80 inches; light yellowish brown (2.5Y 6/3) soft calcareous sandstone, light olive brown (2.5Y 5/3) moist.

Range in Characteristics:

Depth to paralithic contact: 10 to 20 inches
Depth to an effervescent horizon: 0 to 6 inches
Note: The Mittenbutte soil in detailed map unit 162 is a taxadjunct to the Mittenbutte series. It is slightly acid to slightly alkaline throughout the soil and is noneffervescent. This soil is a loamy, mixed, superactive, nonacid, mesic, shallow Aridic Ustorthent.

A horizon:
Reaction: slightly to moderately alkaline

C horizon:
Texture: fine sandy loam or sandy loam
Reaction: slightly to moderately alkaline

Moorhead Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine, smectitic, mesic Torrertic Haplustalfs

Typical pedon: Moorhead clay loam, in an area of Dekay-Moorhead loams, 0 to 6 percent slopes; about 2,450 feet east and 1,450 feet north of the southwest corner of sec. 36, T. 55 N., R. 69 W.; USGS Brislawn School, WY topographic quadrangle; latitude 44 degrees 42 minutes 13 seconds north; longitude 105 degrees 5 minutes 44 seconds west

A—0 to 4 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; weak medium subangular blocky structure parting to weak fine granular; slightly hard, friable, moderately sticky and moderately plastic; many very fine and fine roots throughout; many fine vesicular pores throughout; noneffervescent; neutral (pH 7.3); clear smooth boundary.

Bt—4 to 18 inches; brown (10YR 4/3) clay, dark brown (10YR 3/3) moist; strong medium and coarse prismatic structure parting to moderate fine and medium angular blocky; very hard, firm, very sticky and very plastic; common fine and few medium roots throughout; many fine irregular pores throughout; many distinct continuous very dark grayish brown (10YR 3/2) clay films on faces of peds; noneffervescent; slightly alkaline (pH 7.6); clear wavy boundary.

Btk—18 to 24 inches; brown (10YR 5/3) clay, brown (10YR 4/3) moist; strong medium and coarse prismatic structure parting to moderate fine and medium angular blocky; very hard, firm, very sticky and very plastic; common very fine and fine roots throughout; many fine irregular pores throughout; common distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary.

Bk1—24 to 32 inches; light olive brown (2.5Y 5/3) clay, olive brown (2.5Y 4/3) moist; strong medium and coarse prismatic structure parting to moderate fine and medium angular blocky; hard, firm, very sticky and very plastic; common very fine and fine roots throughout; common fine irregular pores throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; violently effervescent; moderately alkaline (pH 8.2); gradual wavy boundary.

Bk2—32 to 60 inches; light yellowish brown (2.5Y 6/3) clay loam, olive brown (2.5Y 4/3) moist; moderate fine and medium angular blocky structure; hard, friable, moderately sticky and moderately plastic; common fine irregular pores throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline (pH 8.4).

Range in Characteristics:

Depth to an effervescent horizon: 13 to 29 inches

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: clay loam, clay, silty clay loam, or silty clay
Reaction: neutral or slightly alkaline.

Bk horizon:
Texture: clay loam, clay, or silty clay loam

Moskee Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants
Parent material: Alluvium and eolian deposits
Elevation: 3,500 to 5,000 feet
Precipitation: 15 to 17 inches
Slope: 0 to 6 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Aridic Argiustolls

Typical pedon: Moskee fine sandy loam, 0 to 6 percent slopes, about 2,400 feet north and 1,100 feet east of the southwest corner of sec. 12, T. 54 N., R. 74 W.; USGS Recluse, WY topographic quadrangle; latitude 44 degrees 40 minutes 34 seconds north; longitude 105 degrees 42 minutes 42 seconds west

A1—0 to 6 inches; brown (10YR 5/3) fine sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; common fine pores; noneffervescent; neutral; clear smooth boundary.

A2—6 to 9 inches; brown (10YR 5/3) fine sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; many fine pores; noneffervescent; neutral; clear wavy boundary.

Bt—9 to 24 inches; dark yellowish brown (10YR 4/4) sandy clay loam, dark yellowish brown (10YR 3/4) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots throughout; many fine pores; common distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; noneffervescent; neutral; gradual wavy boundary.

Btk—24 to 32 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots throughout; common fine pores; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; common fine irregular light gray (10YR 7/2) carbonate threads throughout; slightly effervescent; slightly alkaline; clear wavy boundary.

Bk—32 to 60 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; moderate fine and medium angular blocky structure; loose, very friable, nonsticky and nonplastic; common very fine and fine roots throughout; many fine pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Thickness of the mollic epipedon: 7 to 20 inches
Depth to an effervescent horizon: 10 to 35 inches

Bt horizon:
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: fine sandy loam, sandy loam, or sandy clay loam
Reaction: slightly to moderately alkaline

Muleherder Series

Depth class: Very deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium and/or colluvium derived from porcelanite
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 60 percent

Taxonomic class: Loamy-skeletal over fragmental, mixed, superactive, mesic Aridic Haplustepts

Typical pedon: Muleherder channery loam, about 200 feet west and 900 feet south of the northeast corner of sec. 7, T. 57 N., R. 73 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 56 minutes 36 seconds north; longitude 105 degrees 40 minutes 31 seconds west

A—0 to 2 inches; reddish brown (5YR 4/3) channery loam, dark reddish brown (5YR 3/3) moist; weak fine granular structure; slightly hard, friable, nonsticky and nonplastic; 15 percent angular porcelanite channery fragments; neutral; clear smooth boundary.

Bw1—2 to 12 inches; reddish brown (5YR 4/4) channery loam, dark reddish brown (5YR 3/4) moist; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; 15 percent angular porcelanite channery fragments; neutral; clear smooth boundary.

Bw2—12 to 16 inches; red (2.5YR 5/6) channery loam, red (2.5YR 4/6) moist; weak fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; 20 percent angular porcelanite channery fragments; neutral; clear wavy boundary.

BCk1—16 to 28 inches; light reddish brown (5YR 6/4) very channery fine sandy loam, reddish brown (5YR 5/4) moist; massive; loose, loose, nonsticky and nonplastic; few distinct discontinuous light gray (10YR 7/2) carbonate coats on rock fragments; strongly effervescent; 40 percent angular porcelanite channery fragments; moderately alkaline; clear wavy boundary.

BCk2—28 to 33 inches; red (2.5YR 5/6) extremely channery fine sandy loam, red (2.5YR 4/6) moist; massive; loose, loose, nonsticky and nonplastic; few distinct discontinuous light gray (10YR 7/2) carbonate coats on rock fragments; strongly effervescent; 65 percent angular porcelanite channery fragments; moderately alkaline; clear wavy boundary.

2C—33 to 80 inches; fractured porcelanite.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 24 inches
Depth to the 2C horizon: 20 to 40 inches

A horizon:
Reaction: neutral or slightly alkaline
Rock fragments: 15 to 35 percent channery fragments and 0 to 5 percent flagstones and stones

Bw horizon:
Texture: very channery loam or channery loam
Reaction: neutral to moderately alkaline
Rock fragments: 15 to 60 percent, with 0 to 5 percent stones, 0 to 15 percent flagstones, and 15 to 55 percent channery fragments

BC horizon:
Texture: very channery loam, very channery fine sandy loam, or very channery sandy loam, extremely channery loam, extremely channery fine sandy loam, or extremely channery sandy loam
Reaction: neutral to moderately alkaline
Rock fragments: 45 to 85 percent, with 0 to 5 percent stones, and 0 to 15 percent flagstones, and 35 to 65 percent channery fragments

Niobrara Series

Depth class: Shallow
Drainage class: Excessively drained
Landform: Hills and ridges
Parent material: Residuum
Elevation: 3,500 to 5,200 feet
Precipitation: 15 to 17 inches
Slope: 3 to 30 percent

Taxonomic class: Mixed, mesic, shallow Aridic Ustipsamments

Typical pedon: Niobrara loamy sand, about 2,200 feet east and 2,220 feet south of the northwest corner of sec. 7, T. 42 N., R. 75 W.; Southern Campbell County

A—0 to 3 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; single grain; loose, friable, nonsticky and nonplastic; many very fine and fine roots;

calcium carbonate disseminated throughout; slightly effervescent; neutral; clear wavy boundary.

C—3 to 12 inches; light yellowish brown (10YR 6/4) sand, yellowish brown (10YR 5/4) moist; massive parting to single grain; loose, friable, nonsticky and nonplastic; common fine and very fine roots; neutral; clear wavy boundary.

Cr—12 to 60 inches; slightly hard, coarse, noneffervescent sandstone.

Range in Characteristics:

Depth to bedrock: 10 to 20 inches
Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: neutral to slightly alkaline.

C horizon:
Texture: loamy fine sand, loamy sand, and sand
Reaction: neutral to slightly alkaline

Nuncho Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans and fan remnants
Parent material: Alluvium
Elevation: 3,500 to 5,200 feet
Precipitation: 15 to 17 inches
Slope: 0 to 6 percent

Taxonomic class: Fine, smectitic, mesic Aridic Argiustolls

Typical pedon: Nuncho clay loam, 0 to 6 percent slopes, about 2,200 feet west and 1,000 feet north of the southeast corner of sec. 2, T. 53 N., R. 75 W.; USGS Truman Draw, WY topographic quadrangle; latitude 44 degrees 37 minutes 51 seconds north; longitude 105 degrees 50 minutes 47 seconds west

A—0 to 5 inches; grayish brown (10YR 5/2) clay loam, very dark grayish brown (10YR 3/2) moist; weak thick platy structure parting to strong fine subangular blocky; hard, friable, moderately sticky and moderately plastic; many very fine and fine and common medium roots throughout; noneffervescent; neutral; clear smooth boundary.

Bt—5 to 18 inches; grayish brown (10YR 5/2) clay, very dark grayish brown (10YR 3/2) moist; strong coarse prismatic structure parting to strong coarse angular blocky; very hard, firm, very sticky and very plastic; many very fine and fine and common medium roots throughout; few distinct discontinuous very dark brown (10YR 2/2) clay films on faces of peds and in pores; noneffervescent; neutral; clear wavy boundary.

Btk—18 to 25 inches; grayish brown (10YR 5/2) clay, dark grayish brown (10YR 4/2) moist; moderate coarse prismatic structure parting to strong medium and coarse angular blocky; very hard, firm, very sticky and very plastic; many very fine and fine roots throughout; few distinct discontinuous very dark grayish brown (10YR 3/2) clay films on faces of peds and in pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; slightly effervescent; slightly alkaline; clear wavy boundary.

Bk1—25 to 41 inches; grayish brown (10YR 5/2) clay, dark grayish brown (10YR 4/2) moist; weak medium and coarse subangular blocky structure; very hard, firm, very sticky and very plastic; common very fine and fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; slightly effervescent; moderately alkaline; clear wavy boundary.

Bk2—41 to 60 inches; light yellowish brown (2.5Y 6/3) clay loam, grayish brown (2.5Y 5/2) moist; massive; hard, firm, moderately sticky and moderately plastic; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 11 to 35 inches

A horizon:
Texture: clay loam or loam,
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: clay loam, clay, or silty clay
Reaction: neutral or slightly alkaline.

Bk horizon:
Texture: clay loam or clay
Reaction: slightly or moderately alkaline

Oldwolf Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs

Typical pedon: Oldwolf loam; about 820 feet north and 1,450 feet west of the southeast corner of sec. 31, T. 49 N., R. 72 W.; USGS Appel Butte, WY topographic quadrangle; latitude 44 degrees 10 minutes 31 seconds north; longitude 105 degrees 33 minutes 20 seconds west; Southern Campbell County

A—0 to 3 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, friable, nonsticky and slightly plastic; many very fine and fine and common medium roots throughout; noneffervescent; neutral; clear smooth boundary.

Bt1—3 to 10 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to strong fine and medium angular blocky; slightly hard, friable, moderately sticky and moderately plastic; many very fine and fine and common medium roots throughout; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; noneffervescent; neutral; clear wavy boundary.

Bt2—10 to 16 inches; pale brown (10YR 6/3) clay loam, brown (10YR 4/3) moist; strong medium prismatic structure parting to strong fine and medium angular blocky; hard, friable, moderately sticky and moderately plastic; many very fine and fine and common medium roots throughout; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; noneffervescent; neutral; clear wavy boundary.

Btk—16 to 21 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; weak fine and medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, friable, slightly sticky and moderately plastic; common very fine and fine roots throughout; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; carbonates are disseminated throughout; strongly effervescent; slightly alkaline; clear wavy boundary.

Bk—21 to 32 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; common fine rounded light gray (10YR 7/2) masses of carbonate throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Cr—32 to 60 inches; soft calcareous shale.

Range in Characteristics:

Depth to bedrock: 20 to 40 inches
Depth to an effervescent horizon: 9 to 32 inches

Bt horizon:
Texture: clay loam or loam
Reaction: neutral or slightly alkaline.

Bk horizon:
Texture: loam or clay loam

Orpha Series

Depth class: Very deep
Drainage class: Excessively drained
Landform: Dunes
Parent material: Eolian deposits
Elevation: 4,000 to 4,500
Precipitation: 10 to 14 inches
Slope: 2 to 20 percent

Taxonomic class: Mixed, mesic Ustic Torripsamments

Typical pedon: Orpha fine sand, in an area of Embry-Orpha complex, 3 to 15 percent slopes, about 200 feet west and 300 feet north of the southeast corner of sec. 34, T. 43 N., R. 72 W.; Southern Campbell County

A—0 to 4 inches; brown (10YR 5/3) fine sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common fine and few medium roots; neutral; gradual smooth boundary.

C—4 to 60 inches; brownish yellow (10YR 6/6) fine sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; few fine roots; neutral.

Range in Characteristics:

Depth to an effervescent horizon: 40 to 60 inches

A horizon:
Reaction: neutral to slightly alkaline

C horizon:
Reaction: neutral to slightly alkaline

Oshoto Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-silty, mixed, superactive, mesic Aridic Haplustalfs

Typical pedon: Oshoto silt loam in an area of Oshoto-Klinedraw silt loams, 0 to 6 percent slopes; about 1,300 feet west and 600 feet south of the northeast corner sec. 34 T. 56 N., R. 75 W.; USGS Reservoir Creek, WY topographic quadrangle; latitude 44 degrees 47 minutes 37 seconds north; longitude 105 degrees 52 minutes 5 seconds west

A—0 to 7 inches; brown (10YR 5/3) silt loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; loose, friable, nonsticky and nonplastic; noneffervescent; neutral; abrupt smooth boundary.

Bt1—7 to 14 inches; brown (10YR 5/3) silty clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, friable, moderately sticky and moderately plastic; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; noneffervescent; neutral; clear wavy boundary.

Bt2—14 to 22 inches; brown (10YR 5/3) silty clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, friable, moderately sticky and moderately plastic; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; noneffervescent; slightly alkaline; gradual wavy boundary.

Btk—22 to 32 inches; light yellowish brown (2.5Y 6/3) silty clay loam, light olive brown (2.5Y 5/3) moist; moderate medium and coarse subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; few distinct discontinuous olive brown (2.5Y 4/3) clay films on faces of peds and in pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bk1—32 to 43 inches; light yellowish brown (2.5Y 6/3) silty clay loam, light olive brown (2.5Y 5/3) moist; moderate medium and coarse subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common fine irregular light gray (10YR 7/2) carbonate threads throughout; violently effervescent; strongly alkaline; gradual wavy boundary.

Bk2—43 to 60 inches; light yellowish brown (2.5Y 6/3) silt loam, light olive brown (2.5Y 5/3) moist; moderate medium and coarse angular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common fine irregular light gray (10YR 7/2) carbonate threads throughout; violently effervescent; strongly alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 10 to 27 inches

A horizon:
Reaction: slightly acid to slightly alkaline.

Bt horizon:
Texture: silty clay loam or clay loam
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: silt loam or loam

Parmleed Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 14 inches
Slope: 0 to 15 percent

Taxonomic class: Fine, smectitic, mesic Ustic Paleargids

Typical pedon: Parmleed loam in an area of Bidman-Parmleed loams, 0 to 6 percent slopes, about 1,700 feet west and 150 feet south of the northeast corner sec. 7, T. 55 N., R. 75 W.; USGS Kline Draw, WY topographic quadrangle; latitude 44 degrees 45 minutes 53 seconds north; longitude 105 degrees 55 minutes 48 seconds west

E—0 to 4 inches; light brownish gray (10YR 6/2) loam, grayish brown (10YR 5/2) moist; moderate thin platy structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine and common medium roots throughout; noneffervescent; neutral (pH 7.2); abrupt wavy boundary.

Bt—4 to 16 inches; brown (10YR 5/3) clay, brown (10YR 4/3) moist; strong medium prismatic structure parting to moderate fine and medium subangular blocky; hard, firm, very sticky and very plastic; many very fine and fine roots throughout; common distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; noneffervescent; slightly alkaline (pH 7.4); gradual wavy boundary.

Btk—16 to 26 inches; light olive brown (2.5Y 5/3) clay, olive brown (2.5Y 4/3) moist; strong medium prismatic structure parting to moderate fine and medium subangular blocky; hard, firm, very sticky and very plastic; many very fine and fine roots throughout; few distinct discontinuous dark olive brown (2.5Y 3/3) clay films on faces of peds and in pores; common fine irregular light gray (10YR 7/2) masses of carbonate throughout; slightly effervescent; slightly alkaline (pH 7.6); gradual wavy boundary.

Bk—26 to 37 inches; light olive brown (2.5Y 5/3) clay loam, olive brown (2.5Y 4/3) moist; moderate fine and medium angular blocky structure; hard, friable, moderately sticky and moderately plastic; many very fine and fine roots throughout; common fine irregular light gray (10YR 7/2) masses of carbonate throughout; strongly effervescent; strongly alkaline; diffuse wavy boundary.

Cr—37 to 60 inches; light yellowish brown (2.5Y 6/3) soft calcareous shale.

Range in Characteristics:

Depth to a paralithic contact: 20 to 40 inches
Depth to an effervescent horizon: 10 to 30 inches

E horizon:
Texture: fine sandy loam or loam

Bt horizon:
Texture: clay or clay loam
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: clay loam or clay
Reaction: slightly to strongly alkaline

Pathfinder Series

Depth class: Very deep
Drainage class: Somewhat excessively drained
Landform: Flood plains and stream terraces
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 6 percent
Flooding: Occasional for very brief periods

Taxonomic class: Sandy, mixed, mesic Aridic Ustifluvents

Typical pedon: Pathfinder loamy fine sand, in an area of Sodawells-Pathfinder-Boruff complex, 0 to 6 percent slopes; about 800 feet south and 330 feet west of the northeast corner of sec. 19, T. 54 N., R. 70 W.; USGS Weston, WY topographic quadrangle; latitude 44 degrees 39 minutes 14 seconds north; longitude 105 degrees 18 minutes 50 seconds west

A—0 to 5 inches; light olive brown (2.5Y 5/3) loamy fine sand, olive brown (2.5Y 4/3) moist; weak fine and medium angular blocky structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium roots throughout; common very fine and fine pores; strongly effervescent; moderately alkaline; clear wavy boundary.

C—5 to 60 inches; light yellowish brown (2.5Y 6/3) loamy fine sand, light olive brown (2.5Y 5/3) moist, stratified with fine sand and fine sandy loam; single grain; loose, loose, nonsticky and nonplastic; many very fine and fine roots throughout; many very fine and fine pores; strongly effervescent; slightly alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: slightly or moderately alkaline.

C horizon:
Texture: dominantly stratified layers of fine sand or loamy fine sand but may contain thin layers of fine sandy loam
Reaction: slightly or moderately alkaline

Pinehill Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine, smectitic, frigid Aridic Haplustalfs

Typical pedon: Pinehill clay loam, in an area of Pinehill-Pylon clay loams, 3 to 15 percent slopes; about 200 feet west and 300 feet north of the southeast corner of sec. 1, T. 57 N., R. 74 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 56 minutes 46 seconds north; longitude 105 degrees 41 minutes 47 seconds west

A—0 to 3 inches; light olive brown (2.5Y 5/3) clay loam, olive brown (2.5Y 4/3) moist; weak fine granular structure; slightly hard, friable, moderately sticky and moderately plastic; many fine roots throughout; common fine low continuity vesicular pores; noneffervescent; neutral; clear smooth boundary.

Bt—3 to 15 inches; olive brown (2.5Y 4/3) clay, olive brown (2.5Y 4/3) moist; strong medium prismatic structure parting to moderate fine and medium angular blocky; hard, firm, very sticky and very plastic; common fine roots throughout; many fine low continuity pores; common distinct discontinuous dark olive brown (2.5Y 3/3) clay films on faces of peds; noneffervescent; slightly alkaline; gradual wavy boundary.

Btk—15 to 31 inches; light olive brown (2.5Y 5/3) clay, olive brown (2.5Y 4/3) moist; strong medium prismatic structure parting to moderate fine and medium angular blocky; hard, firm, very sticky and very plastic; common fine roots throughout; common fine low continuity pores; few distinct discontinuous dark olive brown (2.5Y 3/3) clay films on faces of peds; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bk—31 to 60 inches; light olive brown (2.5Y 5/3) clay loam, olive brown (2.5Y 4/3) moist; moderate fine and medium angular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common fine roots throughout; common fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 12 to 30 inches

A and E horizon:
Texture: clay loam, loam, or silty clay loam
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: clay, clay loam, silty clay, or silty clay loam

Bk horizon:
Texture: clay loam, silty clay loam, or clay

Pitchdraw Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium and/or eolian deposits over residuum
Elevation: 3,500 to 5,200 feet
Precipitation: 15 to 17 inches
Slope: 3 to 30 percent

Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents

Typical pedon: Pitchdraw fine sandy loam, in an area of Pitchdraw-Ashollow-Mittenbutte fine sandy loams, 3 to 20 percent slopes, about 600 feet west and 2,500 feet north of the southeast corner of sec. 28, T. 55 N., R. 73 W.; Recluse topographic quadrangle; latitude 44 degrees, 52 minutes, 54 seconds north; longitude 105 degrees, 38 minutes, 28 seconds west

A—0 to 4 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable; many very fine and fine roots; few fine pores; carbonates are disseminated throughout; slightly effervescent; slightly alkaline (pH 7.6); clear smooth boundary.

Bk1—4 to 9 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable; common very fine and fine roots; few fine pores; carbonates are disseminated throughout; strongly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary.

Bk2—9 to 31 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular structure; soft, very friable; few fine roots throughout; few fine pores; few fine irregular light gray (10YR 7/2) carbonate threads throughout and disseminated throughout; strong effervescence; moderately alkaline (pH 8.2); clear wavy boundary.

Cr—31 to 60 inches; soft, light gray and very pale brown, calcareous sandstone.

Range in Characteristics:

Depth to bedrock: 20 to 40 inches
Depth to an effervescent horizon: 0 to 6 inches

Bk horizon:
Texture: fine sandy loam or sandy loam

Platmak Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans and fan remnants
Parent material: Alluvium
Elevation: 3,500 to 5,000 feet
Precipitation: 15 to 17 inches
Slope: 3 to 6 percent

Taxonomic class: Fine, smectitic, mesic Aridic Paleustolls

Typical pedon: Platmak loam, about 1,050 feet west and 925 feet north of the southeast corner of sec. 34, T. 51 N., R. 73 W.; USGS Gillette West, WY topographic quadrangle; latitude 44 degrees 21 minutes 1 seconds north; longitude 105 degrees 36 minutes 52 seconds west

E—0 to 4 inches; grayish brown (10YR 5/2) loam, dark brown (10YR 3/3) moist; strong thin platy structure parting to strong very fine granular; soft, very friable, slightly sticky and nonplastic; many very fine and fine and common medium roots throughout; noneffervescent; neutral; abrupt smooth boundary.

Bt1—4 to 12 inches; dark grayish brown (10YR 4/2) clay, very dark grayish brown (10YR 3/2) moist; strong medium prismatic structure parting to strong fine and medium angular blocky; hard, firm, very sticky and very plastic; many very fine and fine and common medium roots throughout; few distinct discontinuous black (10YR 2/1) clay films on faces of peds and in pores; noneffervescent; neutral; clear smooth boundary.

Bt2—12 to 18 inches; brown (10YR 5/3) clay, brown (10YR 4/3) moist; strong medium and coarse prismatic structure parting to strong medium and coarse angular blocky; hard, firm, very sticky and very plastic; many very fine and fine and common medium roots throughout; few distinct discontinuous very dark grayish brown (10YR 3/2) clay films on faces of peds and in pores; noneffervescent; slightly alkaline; clear wavy boundary.

Btk—18 to 27 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; weak medium prismatic structure parting to moderate fine and medium subangular blocky; hard, friable, very sticky and moderately plastic; common very fine to medium roots throughout; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk1—27 to 40 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common fine and medium roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk2—40 to 60 inches; pale brown (10YR 6/3) clay loam, brown (10YR 4/3) moist; massive; hard, friable, moderately sticky and moderately plastic; common fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 13 to 30 inches
Rock fragments: 0 to 5 percent

Bt horizon:
Texture: clay or clay loam
Reaction: neutral or slightly alkaline

Pylon Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine, smectitic, frigid Torrertic Haplustalfs

Typical pedon: Pylon clay loam, in an area of Pinehill-Pylon clay loams, 3 to 15 percent slopes; about 2,400 feet east and 600 feet south of the northwest corner of sec. 7, T. 57 N., R. 73 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 36 minutes 40 seconds north; longitude 105 degrees 51 minutes 5 seconds west

A—0 to 3 inches; light olive brown (2.5Y 5/3) clay loam, olive brown (2.5Y 4/3) moist; moderate fine and medium angular blocky structure parting to weak fine granular; hard, friable, slightly sticky and slightly plastic; common fine roots throughout; common fine low continuity vesicular pores; noneffervescent; neutral; clear smooth boundary.

Bt—3 to 16 inches; olive brown (2.5Y 4/3) clay, dark olive brown (2.5Y 3/3) moist; strong medium prismatic structure parting to moderate fine and medium angular blocky; very hard, very firm, very sticky and very plastic; common fine roots throughout; many fine low continuity pores; common distinct discontinuous very dark grayish brown (2.5Y 3/2) clay films on faces of peds; noneffervescent; slightly alkaline; gradual wavy boundary.

Btk—16 to 21 inches; light olive brown (2.5Y 5/3) clay, olive brown (2.5Y 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; very hard, very firm, very sticky and very plastic; common fine roots throughout; many fine low continuity pores; common distinct discontinuous dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk—21 to 30 inches; grayish brown (2.5Y 5/2) clay loam, dark grayish brown (2.5Y 4/2) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; hard, friable, moderately sticky and moderately plastic; common fine roots throughout; common fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; abrupt wavy boundary.

Cr—30 to 60 inches; bedrock.

Range in Characteristics:

Depth to bedrock: 20 to 40 inches
Depth to an effervescent horizon: 9 to 21 inches

A horizon:
Reaction: neutral or slightly alkaline.

Bt horizon:
Texture: clay loam or clay

Bk horizon:
Texture: clay loam or clay

Recluse Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans and fan remnants
Parent material: Alluvium
Elevation: 3,500 to 5,200 feet
Precipitation: 15 to 17 inches
Slope: 0 to 6 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Aridic Argiustolls

Typical pedon: Recluse loam, about 550 feet north and 2,050 feet east of the southwest corner of sec. 4, T. 47 N., R. 74 W.; USGS Double Tanks, WY topographic quadrangle; latitude 44 degrees 4 minutes 25 seconds north; longitude 105 degrees 45 minutes 41 seconds west; Southern Campbell County

A—0 to 5 inches; brown (10YR 4/3) loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; noneffervescent; neutral (pH 6.8); abrupt smooth boundary.

Bt1—5 to 12 inches; brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; moderate medium prismatic structure parting to strong fine and medium angular blocky; hard, friable, moderately sticky and moderately plastic; few distinct discontinuous very dark grayish brown (10YR 3/2) clay films on faces of peds and in pores; noneffervescent; neutral (pH 7.0); clear wavy boundary.

Bt2—12 to 17 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to strong medium angular blocky; hard, friable, moderately sticky and moderately plastic; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; noneffervescent; neutral (pH 7.2); abrupt wavy boundary.

Btk—17 to 23 inches; pale brown (10YR 6/3) clay loam, brown (10YR 4/3) moist; weak medium prismatic structure parting to moderate fine and medium angular blocky; hard, friable, moderately sticky and moderately plastic; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; slightly alkaline (pH 7.8); clear wavy boundary.

Bk1—23 to 42 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and moderately plastic; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

Bk2—42 to 60 inches; light brownish gray (10YR 6/2) loam, grayish brown (10YR 5/2) moist; weak medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline (pH 8.4).

Range in Characteristics:

Depth to an effervescent horizon: 11 to 27 inches

Bt horizon:
Texture: clay loam or loam
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: loam or clay loam

Renohill Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 5,000 feet
Precipitation: 10 to 14 inches
Slope: 0 to 15 percent

Taxonomic class: Fine, smectitic, mesic Ustic Haplargids

Typical pedon: Renohill clay loam, about 200 feet east and 1,000 feet north of the southwest corner of sec. 21, T. 42 N., R. 70 W.; USGS Teckla, WY topographic quadrangle; latitude 43 degrees 35 minutes 42 seconds north; longitude 105 degrees 16 minutes 58 seconds west; Southern Campbell County

A—0 to 4 inches; grayish brown (10YR 5/2) clay loam, dark grayish brown (10YR 4/2) moist; moderate very fine and fine granular structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine roots throughout; noneffervescent; neutral; clear smooth boundary.

Bt1—4 to 9 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; slightly hard, firm, moderately sticky and moderately plastic; many very fine and fine roots throughout; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; noneffervescent; slightly alkaline; clear smooth boundary.

Bt2—9 to 19 inches; pale brown (10YR 6/3) clay, brown (10YR 5/3) moist; strong medium prismatic structure parting to strong fine angular blocky; hard, very firm, moderately sticky and moderately plastic; many very fine and fine roots throughout; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; noneffervescent; moderately alkaline; clear smooth boundary.

Btk—19 to 24 inches; light brownish gray (10YR 6/2) clay loam, grayish brown (10YR 5/2) moist; moderate fine and medium prismatic structure parting to moderate fine and medium angular blocky; slightly hard, firm, moderately sticky and moderately plastic; many very fine and fine roots throughout; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk—24 to 35 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; slightly hard, firm, moderately sticky and moderately plastic; many very fine and fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Cr—35 to 60 inches; soft calcareous shale.

Range in Characteristics:

Depth to bedrock: 20 to 40 inches
Depth to an effervescent horizon: 10 to 20 inches

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: clay or clay loam
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: clay loam or clay

Rockybutte Series

Depth class: Very deep
Drainage class: Well drained
Landform: Plateaus and ridges
Parent material: Alluvium and/or eolian deposits over weathered porcelanite
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 10 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs

Typical pedon: Rockybutte loam, in an area of Brislawn-Rockybutte-Ironbutte complex, 0 to 10 percent slopes; about 2,500 feet west and 500 feet south of the northeast corner of sec. 18, T. 56 N., R. 71 W.; USGS Rocky Butte SW., WY topographic quadrangle; latitude 44 degrees 55 minutes 13 seconds north; longitude 105 degrees 26 minutes 25 seconds west

A—0 to 4 inches; brown (7.5YR 4/3) loam, dark brown (7.5YR 3/3) moist; weak fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; common fine pores; 5 percent subangular porcelanite channery fragments; neutral (pH 6.8); clear smooth boundary.

Bt1—4 to 10 inches; brown (7.5YR 4/4) clay loam, dark brown (7.5YR 3/4) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; slightly hard, friable, moderately sticky, moderately plastic; common distinct discontinuous dark brown (7.5YR 3/3) clay films on faces of peds and in pores; 10 percent subangular porcelanite channery fragments; neutral (pH 7.2); gradual wavy boundary.

Bt2—10 to 16 inches; brown (7.5YR 4/4) channery clay loam, dark brown (7.5YR 3/4) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, very friable, moderately sticky, moderately plastic; common distinct discontinuous dark brown (7.5YR 3/3) clay films on faces of peds and in pores; 20 percent subangular porcelanite channery fragments; slightly alkaline (pH 7.4); clear wavy boundary.

Btk—16 to 23 inches; brown (7.5YR 5/4) very channery clay loam, brown (7.5YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable; common distinct discontinuous dark brown (7.5YR 3/3) clay films on faces of peds and in pores; few fine irregular light gray (10YR 7/2) carbonate threads throughout; 35 percent subangular porcelanite channery fragments; strongly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary.

Bk—23 to 29 inches; brown (7.5YR 5/4) extremely channery loam, brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, few distinct discontinuous light gray (10YR 7/2) carbonate coats on bottom surfaces of rock fragments; few fine irregular light gray (10YR 7/2) carbonate threads throughout; 60 percent subangular porcelanite channery fragments; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

2C—29 to 60 inches; fractured porcelanite with 7 percent sandy loam filling interstices and voids brown (7.5YR 5/4) sandy loam, brown (7.5YR 4/4) moist; massive; few distinct discontinuous light gray (10YR 7/2) carbonate coats on bottom surfaces of rock fragments; 65 percent subangular scoria channery fragments, 20 percent subangular porcelanite flagstones, and 8 percent subrounded stones; slightly effervescent but variable; few segregated masses or threads of calcium carbonates throughout; slightly alkaline.

Range in Characteristics:

Depth to the 2C horizon: 20 to 40 inches.
Depth to an effervescent horizon: 18 to 31 inches

A horizon:
Reaction: neutral or slightly alkaline
Rock fragments: 0 to 14 percent

Bt horizon:
Textures: loam, clay loam, channery loam, or channery clay loam
Reaction: neutral or slightly alkaline
Rock fragments: 0 to 30 percent

Bk horizon:
Textures: very channery loam, very channery sandy loam, extremely channery loam, or extremely channery sandy loam
Reaction: slightly or moderately alkaline
Rock fragments: 35 to 75 percent channery fragments, 0 to 5 percent flagstones

C horizon:
Texture: fractured porcelanite with less than 10 percent of interstices or voids filled with loam or sandy loam
Reaction: neutral or slightly alkaline
Rock fragments: 95 to 100 percent with 60 to 95 percent channery fragments, 0 to 15 percent flagstones, and 0 to 5 percent stones

Rockypoint Series

Depth class: Very deep
Drainage class: Well and moderately well drained
Landform: Flood plains and stream terraces
Parent material: Alluvium
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 3 percent
Flooding: Occasional flooding for very brief periods

Taxonomic class: Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustifluvents

Typical pedon: Rockypoint loam, about 500 feet north and 1,500 feet east of the southwest corner of sec. 5, T. 50 N., R. 74 W.; Jeffers Draw USGS quadrangle; latitude 44 degrees, 19 minutes, 59 seconds north; longitude 105 degrees, 47 minutes, 12 seconds west; Southern Campbell County

A—0 to 4 inches; grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; carbonates disseminated throughout; slightly effervescent; slightly alkaline; clear smooth boundary.

C1—4 to 30 inches; pale brown (10YR 6/3) clay loam, stratified with fine sandy loam, loam, and silty clay loam, brown (10YR 4/3) moist; massive; hard, friable, moderately sticky and moderately plastic; carbonates disseminated throughout; strongly effervescent; moderately alkaline; clear smooth boundary.

C2—30 to 60 inches; pale brown (10YR 6/3) loam, stratified with very fine sandy loam, fine sandy loam, silt loam, and clay loam, brown (10YR 5/3) moist; massive; hard, friable, slightly sticky and moderately plastic; carbonates disseminated throughout; slightly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 10 inches

A horizon:
Reaction: neutral to moderately alkaline.

C horizon:
Texture: dominantly loam or clay loam but stratified with a few thin layers of loamy sand, sandy loam, or very fine sandy loam
Reaction: slightly to strongly alkaline
Sodium Adsorption Ratio: 0 to 5
Electrical Conductivity: 4 to 8 millimhos per centimeter

Sabatka Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 3 to 30 percent

Taxonomic class: Fine, smectitic, mesic Aridic Haplustepts

Typical pedon: Sabatka clay loam, about 1,150 feet west and 200 feet north of the southeast corner of sec. 33, T. 56 N., R. 69 W.; USGS Bowman Hill, WY topographic quadrangle; latitude 44 degrees 52 minutes 20 seconds north; longitude 105 degrees 8 minutes 39 seconds west

A—0 to 3 inches; grayish brown (2.5Y 5/2) clay loam, dark grayish brown (2.5Y 4/2) moist; strong fine and medium angular blocky structure; very hard, firm, moderately sticky and moderately plastic; neutral; clear smooth boundary.

Bw—3 to 19 inches; dark grayish brown (2.5Y 4/2) clay, very dark grayish brown (2.5Y 3/2) moist; strong medium prismatic structure parting to strong fine and medium angular blocky; extremely hard, very firm, very sticky and very plastic; neutral; clear wavy boundary.

C—19 to 30 inches; dark olive gray (5Y 3/2) clay, black (5Y 2/2) moist; moderate fine and medium angular blocky structure inherent to the parent material; very hard, firm, moderately sticky and moderately plastic; neutral; abrupt wavy boundary.

Cr—30 to 80 inches; dark olive gray (5Y 3/2) noncalcareous clayey shale.

Range in Characteristics:

Depth to paralithic contact: 20 to 40 inches
Rock fragments: 0 to 5 percent
Note: Some pedons have up to 25 percent pebbles on the surface.

A horizon:
Reaction: neutral or slightly alkaline

Bw horizon:
Texture: clay or clay loam
Reaction: neutral or slightly alkaline

C horizon:
Texture: clay or clay loam
Reaction: moderately acid to slightly alkaline

Samday Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Residuum
Elevation: 3,500 to 5,800 feet
Precipitation: 10 to 14 inches
Slope: 3 to 45 percent

Taxonomic class: Clayey, smectitic, calcareous, mesic, shallow Ustic Torriorthents

Typical pedon: Samday clay loam, about 1,900 feet south and 2,100 feet west of the northeast corner of sec. 6, T. 47 N., R. 71 W.; Southern Campbell County

A—0 to 2 inches; pale brown (10YR 6/3) clay loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; hard, firm, sticky and plastic; many very fine and fine roots; slightly alkaline; clear smooth boundary.

C—2 to 16 inches; light brownish gray (10YR 6/2) silty clay, dark grayish brown (10YR 4/2) moist; massive; very hard, very firm, very sticky and very plastic; common very fine and fine roots; strongly effervescent, calcium carbonate mostly disseminated; moderately alkaline; clear wavy boundary.

Cr—16 to 60 inches; soft effervescent shale.

Range in Characteristics:

Depth to the paralithic contact: 6 to 20 inches
Depth to an effervescent horizon: 0 to 6 inches
Rock fragments: 0 to 5 percent

A horizon:
Reaction: neutral to moderately alkaline

C horizon:
Texture: clay or clay loam
Reaction: slightly or moderately alkaline

Samsil Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Residuum
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 3 to 50 percent

Taxonomic class: Clayey, smectitic, calcareous, mesic, shallow Aridic Ustorthents

Typical pedon: Samsil clay loam, in an area of Fairburn-Samsil-Badland complex, 10 to 45 percent slopes; about 2,100 feet south and 1,450 feet east of the northwest corner of sec. 32, T. 56 N., R. 72 W.; USGS Whitetail Butte, WY topographic quadrangle; latitude 44 degrees 47 minutes 43 seconds north; longitude 105 degrees 32 minutes 55 seconds west

A—0 to 4 inches; light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure parting to moderate fine and medium granular; hard, firm, very sticky and very plastic; many very fine and fine roots throughout; many very fine and fine pores; slightly effervescent; neutral; clear smooth boundary.

C—4 to 15 inches; light yellowish brown (2.5Y 6/4) clay, light yellowish brown (2.5Y 6/3) moist; strong medium and coarse angular blocky structure; very hard, firm, very sticky and very plastic; many very fine and fine roots throughout; many very fine and fine pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; 5 percent gravel-size shale pararock fragments; moderately alkaline; gradual wavy boundary.

Cr—15 to 60 inches; soft calcareous shale interbedded with mudstone and sandstone.

Range in Characteristics:

Depth to paralithic contact: 10 to 20
Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: slightly or moderately alkaline

C horizon:
Texture: clay or clay loam
Pararock fragments: 5 to 40 percent weakly cemented shale fragments

Savageton Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges

Parent material: Alluvium over residuum
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 14 inches
Slope: 3 to 15 percent

Taxonomic class: Fine, smectitic, mesic Ustic Haplocambids

Typical pedon: Savageton clay loam, about 1,000 feet west and 1,200 feet south of the northeast corner of sec. 21, T. 49 N., R. 73 W.; Southern Campbell County

A—0 to 5 inches; brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; moderate medium and fine granular structure; slightly hard, firm, sticky and plastic; few coarse and medium and many fine roots; slightly alkaline; clear wavy boundary.

Bw—5 to 15 inches; light brownish gray (2.5Y 6/2) clay, light olive brown (2.5Y 5/4) moist; weak medium and fine prismatic structure parting to moderate medium and fine subangular blocky; very hard, firm, very sticky and plastic; few coarse and medium and common fine roots; calcium carbonate disseminated; slightly effervescent, moderately alkaline; clear wavy boundary.

Bk—15 to 28 inches; light yellowish brown (2.5Y 6/4) clay, light olive brown (2.5Y 5/4) moist; massive; very hard, firm, very sticky and very plastic; few fine, medium, and coarse roots; few to common fine irregularly shaped filaments and threads of calcium carbonate; finely divided gypsum; strongly effervescent; strongly alkaline; gradual wavy boundary.

Cr—28 to 60 inches; soft shale.

Range in Characteristics:

Depth to paralithic contact: 20 to 40 inches
Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: neutral to moderately alkaline

Bw horizon:
Texture: clay or clay loam
Reaction: slightly to strongly alkaline

Bk horizon:
Texture: clay or clay loam
Reaction: moderately or strongly alkaline

Shingle Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 3 to 45 percent

Taxonomic class: Loamy, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents

Typical pedon: Shingle loam, in an area of Theedle-Shingle loams, 3 to 30 percent slopes; about 800 feet south and 1,800 feet west of the northeast corner of sec. 36, T. 52 N., R. 76 W.; Echeta, WY quadrangle, latitude 44 degrees 26 minutes 42 seconds north; longitude 105 degrees 56 minutes 27 seconds west

A—0 to 2 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots throughout; noneffervescent; slightly alkaline; clear smooth boundary.

C1—2 to 7 inches; light yellowish brown (10YR 6/4) loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and slightly plastic; common very fine and fine roots throughout; strongly effervescent; moderately alkaline; clear smooth boundary.

C2—7 to 12 inches; very pale brown (10YR 7/3) loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and slightly plastic; common very fine and fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; violently effervescent; moderately alkaline; abrupt smooth boundary.

Cr—12 to 60 inches; very pale brown (10YR 7/3) soft calcareous shale.

Range in Characteristics:

Depth to paralithic contact: 10 to 20 inches
Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Texture: loam or clay loam
Reaction: neutral to moderately alkaline

C horizon:
Texture: loam or clay loam
Pararock fragments: 0 to 10 percent shale fragments

Silhouette Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 14 inches
Slope: 0 to 15 percent

Taxonomic class: Fine, smectitic, mesic Ustic Haplocambids

Typical pedon: Silhouette clay loam, about 500 feet east and 850 feet south of the northwest corner of sec. 30, T. 42 N., R. 71 W.; Southern Campbell County

A—0 to 2 inches; yellowish brown (10YR 5/4) clay loam, dark brown (10YR 4/3) moist; moderate fine granular structure; slightly hard, friable, sticky and plastic;

few medium and many very fine and fine roots; slightly alkaline; abrupt wavy boundary.

Bw1—2 to 16 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; moderate medium prismatic structure parting to strong medium subangular blocky; hard, firm, sticky and plastic; few medium and common very fine and fine roots; calcium carbonate disseminated; slightly effervescent, moderately alkaline; clear wavy boundary.

Bw2—16 to 28 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; weak medium prismatic structure parting to moderate medium and fine subangular blocky; hard, firm, sticky and plastic; few very fine, fine, and medium roots; few medium and fine irregularly shaped threads of calcium carbonate; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk—28 to 60 inches; light yellowish brown (2.5Y 6/4) clay loam, light olive brown (2.5Y 5/4) moist; massive; hard, firm, sticky and plastic; few very fine, fine, and medium roots; many medium and fine irregularly shaped threads and soft masses of calcium carbonate; strongly effervescent, moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 8 inches

A horizon:
Reaction: neutral or slightly alkaline

Bw horizon:
Texture: clay loam or clay
Reaction: slightly or moderately alkaline

Bk horizon:
Texture: clay loam or clay

Sodawells Series

Depth class: Very deep
Drainage class: Well drained
Landform: Flood plains and stream terraces
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 3 percent
Flooding: Occasional flooding for very brief periods

Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, mesic Aridic Ustifluvents

Typical pedon: Sodawells fine sandy loam, in an area of Rockypoint-Sodawells complex, 0 to 3 percent slopes; about 2,500 feet south and 300 feet west of the northeast corner of sec. 19, T. 54 N., R. 70 W.; USGS Weston, WY topographic quadrangle; latitude 44 degrees 39 minutes 2 seconds north; longitude 105 degrees 18 minutes 41 seconds west

A—0 to 5 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure parting to weak fine granular;

slightly hard, very friable, slightly sticky and nonplastic; many very fine and fine and common medium roots throughout; many very fine and fine pores; neutral; clear wavy boundary.

C1—5 to 40 inches; light yellowish brown (2.5Y 6/3) fine sandy loam, light olive brown (2.5Y 5/3) moist, stratified with thin layers of silt loam, loamy fine sand, and very fine sandy loam; moderate fine and medium subangular blocky structure parting to weak fine granular; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; many very fine and fine pores; strongly effervescent; 1 percent gravel; slightly alkaline.

C2—40 to 80 inches; light yellowish brown (2.5Y 6/3) fine sandy loam, light olive brown (2.5Y 5/3) moist, stratified with thin layers of silt loam, loamy fine sand, and very fine sandy loam; massive; slightly hard, very friable, nonsticky and nonplastic; few fine prominent strong brown (7.5YR 5/6) redoximorphic concentrations; few fine prominent gray (10YR 6/1) redoximorphic depletions; strongly effervescent; 1 percent gravel; slightly alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 8 inches

A horizon:
Reaction: neutral or slightly alkaline

C horizon:
Texture: dominantly fine sandy loam and sandy loam but stratified with many thin layers of loam, silt loam, loamy fine sand, loamy sand, or sand
Reaction: slightly or moderately alkaline

Spottedhorse Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 6 percent

Taxonomic class: Fine, smectitic, mesic Aridic Paleustalfs

Typical pedon: Spottedhorse loam, in an area of Spottedhorse-Leiter complex, 0 to 6 percent slopes; about 600 feet north and 2,300 feet east of the southwest corner of sec. 5, T. 55 N., R. 74 W.; Reservoir Creek, WY USGS topoquadrangle; latitude 44 degrees 46 minutes 04 seconds north; longitude 105 degrees 47 minutes 35 seconds west

E—0 to 4 inches; light brownish gray (10YR 6/2) loam, brown (10YR 4/3) moist; strong medium, thin, and very thin platy structure; slightly hard, very friable, nonsticky and slightly plastic; thin vesicular crust on soil surface; many very fine and fine roots; neutral (pH 7.0); abrupt smooth boundary.

Bt—4 to 13 inches; yellowish brown (10YR 5/4) clay, dark yellowish brown (10YR 3/4) moist; strong medium prismatic structure parting to strong medium and fine angular blocky; extremely hard, very firm, very sticky and very plastic;

many very fine and fine roots; few prominent dark brown (10YR 3/3) clay films on faces of peds and lining pores and root channels; neutral (pH 7.2); clear smooth boundary.

Btk—13 to 27 inches; light brownish gray (10YR 6/2) clay loam, brown (10YR 5/3) moist; strong coarse prismatic structure parting to strong medium and fine angular blocky; very hard, firm, moderately sticky and moderately plastic; many very fine and fine roots; few distinct dark brown (10YR 3/3) clay films on faces of peds and in pores; common fine irregular light gray (10YR 7/2) threads of calcium carbonate; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk—27 to 35 inches; light gray (10YR 7/2) clay loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common fine roots; common fine irregular very pale brown (10YR 8/2) threads of calcium carbonate; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Cr—35 to 60 inches; soft shale; slightly effervescent in the upper 9 inches and noneffervescent below.

Range in Characteristics:

Depth to paralithic contact: 20 to 40 inches
Depth to an effervescent horizon: 9 to 24 inches

E horizon:
Reaction: slightly acid to slightly alkaline

Bt horizon:
Texture: clay or clay loam
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: clay loam or clay

Stetter Series

Depth class: Very deep
Drainage class: Well drained
Landform: Flood plains
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 3 percent

Taxonomic class: Fine, smectitic, nonacid, mesic Torrertic Ustifluvents

Typical pedon: Stetter clay, 0 to 3 percent slopes; about 750 feet west and 1,900 feet south of the northeast corner of sec. 12, T. 56 N., R. 69 W.; USGS Bonnie reservoir, WY topographic quadrangle; latitude 44 degrees 51 minutes 14 seconds north; longitude 105 degrees 4 minutes 43 seconds west

A—0 to 3 inches; black (5Y 2/2) clay, very dark grayish brown (2.5Y 3/2) moist; strong fine and medium angular blocky structure; hard, firm, very sticky and very plastic; many very fine and fine roots throughout; many very fine and fine pores; noneffervescent; moderately acid; gradual wavy boundary.

C1—3 to 11 inches; black (5Y 2/2) clay, very dark grayish brown (2.5Y 3/2) moist; strong coarse angular blocky structure parting to moderate fine and medium angular blocky; hard, firm, very sticky and very plastic; many very fine and fine roots throughout; many very fine and fine pores; noneffervescent; neutral; clear wavy boundary.

C2—11 to 60 inches; black (5Y 2/2) clay, very dark grayish brown (2.5Y 3/2) moist; stratified with silty clay, silty clay loam, and silt loam; common fine prominent strong brown (7.5YR 4/6) and few fine distinct gray (N 5/0) mottles below 40 inches; strong coarse angular blocky structure parting to moderate fine and medium angular blocky; hard, firm, very sticky and very plastic; many very fine and fine roots throughout; common very fine and fine pores; very few distinct discontinuous black (N 2/0) organic coats in root channels and/or pores; noneffervescent; slightly alkaline.

Range in Characteristics:

Rock fragments: 0 to 5 percent
Note: When the soil is dry, cracks l/2 to 2 inches wide extend from the soil surface to a depth of 4 feet or more.

A horizon:
Reaction: slightly acid or slightly alkaline

C horizon:
Texture: dominantly clay or silty clay but stratified with thin layers of silty clay loam or silt loam
Reaction: slightly or moderately alkaline
Sodium Adsorption Ratio: 0 to 5
Electrical Conductivity: 4 to 8 millimhos per centimeter

Swanboy Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 6 percent

Taxonomic class: Very-fine, smectitic, mesic Aridic Haplusterts

Typical pedon: Swanboy clay, in an area of Swanboy-Cedarbutte-Slickspots complex, 0 to 6 percent slopes, about 1,500 feet west and 1,300 feet south of the northeast corner of sec. 13, T. 56 N., R. 69 W.; USGS Bonnie Reservoir, WY topographic quadrangle; latitude 44 degrees 50 minutes 29 seconds north; longitude 105 degrees 4 minutes 56 seconds west

A—0 to 4 inches; olive brown (2.5Y 5/3) clay, dark olive brown (2.5Y 3/3) moist; strong medium angular blocky structure parting to moderate fine and medium granular; very hard, firm, very sticky and very plastic; many very fine and fine roots throughout; common very fine and fine pores; noneffervescent; neutral;

clear wavy boundary. (Cracks at the surface 1/2 to 2 inches wide up to 5 feet long and 15 inches deep.)

Bssyz1—4 to 15 inches; dark olive gray (5Y 3/2) clay, black (5Y 2/2) moist; strong medium and coarse angular blocky structure parting to moderate fine and medium wedge-shaped aggregates; extremely hard, very firm, very sticky and very plastic; common very fine and fine roots throughout; common very fine and fine pores; few distinct discontinuous very dark gray (5Y 3/1) intersecting slickensides on vertical faces of peds; common fine rounded light gray (10YR 7/2) masses of gypsum throughout and common fine rounded white (10YR 8/1) salt masses throughout; inconsistently effervescent; neutral; clear wavy boundary.

Bssyz2—15 to 45 inches; olive gray (5Y 4/2) clay, black (5Y 2/2) moist; strong medium and coarse angular blocky structure parting to moderate fine and medium wedge-shaped aggregates; very hard, very firm, very sticky and very plastic; common very fine and fine roots throughout; common very fine and fine pores; few distinct discontinuous very dark gray (5Y 3/1) intersecting slickensides on vertical faces of peds; common fine rounded light gray (10YR 7/2) masses of gypsum throughout; common fine rounded white (10YR 8/1) salt masses throughout; inconsistently effervescent; slightly alkaline; gradual wavy boundary.

Cyz—45 to 60 inches; olive (5Y 4/3) clay, dark olive gray (5Y 3/2) moist; massive; very hard, very firm, very sticky and very plastic; common very fine and fine roots throughout; common fine cylindrical light gray (10YR 7/2) gypsum crystals throughout; common fine rounded white (10YR 8/1) salt masses throughout; inconsistently effervescent; slightly alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: neutral to moderately alkaline
Sodium Adsorption Ratio: 0 to 5
Electrical Conductivity: 0 to 2 millimhos per centimeter

Bssyz horizon:
Texture: clay or silty clay
Reaction: neutral to moderately alkaline
Sodium Adsorption Ratio: 5 to 13
Electrical Conductivity: 8 to 16 millimhos per centimeter

Cyz horizon:
Texture: clay or silty clay
Reaction: slightly to strongly alkaline
Sodium Adsorption Ratio: 13 to 25
Electrical Conductivity: 8 to 16 millimhos per centimeter

Taluce Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum

Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 3 to 45 percent

Taxonomic class: Loamy, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents

Typical pedon: Taluce fine sandy loam, in an area of Shingle-Taluce-Badland complex, 6 to 45 percent slopes, about 150 feet east and 2,100 feet north of the southwest corner of sec. 5, T. 51 N., R. 75 W.; USGS Echeta, WY topographic quadrangle; latitude 44 degrees 25 minutes 25 seconds north; longitude 105 degrees 54 minutes 45 seconds west;

A—0 to 2 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; noneffervescent; slightly alkaline; clear smooth boundary.

C1—2 to 5 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; carbonates are disseminated throughout; strongly effervescent; slightly alkaline; clear smooth boundary.

C2—5 to 18 inches; light gray (10YR 7/2) fine sandy loam, brown (10YR 5/3) moist; single grain; soft, very friable, nonsticky and nonplastic; carbonates are disseminated throughout; violently effervescent; moderately alkaline; clear wavy boundary.

Cr—18 to 60 inches; soft calcareous sandstone.

Range in Characteristics:

Depth to bedrock: 10 to 20 inches

A horizon:
Reaction: neutral to moderately alkaline

C horizon:
Texture: fine sandy loam or sandy loam

Terro Series

Depth class: Moderately deep
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 2 to 30 percent

Taxonomic class: Coarse-loamy, mixed, superactive, mesic Ustic Haplargids

Typical pedon: Terro fine sandy loam, in an area of Vonalee-Terro-Taluce fine sandy loams, 3 to 30 percent slopes, about 1,750 feet east and 1,910 feet north of the southwest corner of sec. 21, T. 55 N., R. 75. Larey Draw quadrangle; latitude 44 degrees 43 minutes 39 seconds north; longitude 105 degrees 53 minute 46 seconds west

A—0 to 3 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; common vesicular pores with low continuity throughout; neutral (pH 7.2); clear smooth boundary.

Bt—3 to 16 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak fine prismatic structure parting to weak fine and medium subangular blocky; soft, very friable, nonsticky and nonplastic; common fine roots throughout; many irregular pores with low continuity throughout; common distinct discontinuous dark brown (10YR 3/3) clay bridges between sand grains; slightly alkaline (pH 7.6); clear smooth boundary.

Bk—16 to 30 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and medium roots throughout; many irregular pores with low continuity throughout; strongly effervescent; few fine irregular light gray (10YR 7/2) carbonate threads throughout; moderately alkaline (pH 8.0); abrupt smooth boundary.

Cr—30 to 60 inches; soft, calcareous sandstone.

Range in Characteristics:

Depth to bedrock: 20 to 40 inches
Depth to an effervescent horizon: 15 to 22 inches

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: fine sandy loam or sandy loam
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: fine sandy loam or sandy loam
Reaction: slightly or moderately alkaline

Theedle Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 3 to 30 percent

Taxonomic class: Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents

Typical pedon: Theedle loam, about 2,050 feet south and 1,900 feet east of the northwest corner of sec. 10, T. 47 N., R. 71 W.; USGS The Gap SW, WY topographic quadrangle; latitude 44 degrees 4 minutes 2 seconds north; longitude 105 degrees 22 minutes 30 seconds west; Southern Campbell County

A—0 to 2 inches; pale brown (10YR 6/3) loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; carbonates disseminated throughout; slightly effervescent; moderately alkaline; clear smooth boundary.

Bk1—2 to 12 inches; brown (10YR 5/3) loam, dark grayish brown (10YR 4/2) moist; weak medium angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk2—12 to 28 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; slightly hard, firm, moderately sticky and moderately plastic; many fine irregular light gray (10YR 7/2) carbonate threads throughout; violently effervescent; moderately alkaline; clear wavy boundary.

Cr—28 to 60 inches; soft calcareous shale.

Range in Characteristics:

Depth to bedrock: 20 to 40 inches
Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: neutral to moderately alkaline

Bk horizon:
Texture: loam or clay loam

Toby Series

Depth class: Very deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 3 to 15 percent

Taxonomic class: Coarse-loamy, mixed, superactive, frigid Aridic Haplustalfs

Typical pedon: Toby fine sandy loam, in an area of Toby-Twilight-Blacksheep fine sandy loams, 3 to 30 percent slopes, about 100 feet east and 2000 feet south of the northwest corner of sec. 19, T. 57 N., R. 74 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 54 minutes 42 seconds north; longitude 105 degrees 41 minutes 40 seconds west

A—0 to 7 inches; grayish brown (10YR 5/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine and medium subangular blocky structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; common fine low continuity vesicular pores; noneffervescent; neutral; clear smooth boundary.

Bw—7 to 33 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots throughout; common fine low continuity pores; noneffervescent; slightly alkaline; clear smooth boundary.

C—33 to 60 inches; light olive brown (2.5Y 5/4) fine sandy loam, olive brown (2.5Y 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common very fine and fine roots throughout; common fine low continuity pores; carbonates disseminated throughout; very slightly effervescent; slightly alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 30 to 45 inches or more

A horizon:
Reaction: neutral or slightly alkaline

Bw horizon:
Texture: fine sandy loam or sandy loam
Reaction: neutral to slightly alkaline

C horizon:
Texture: fine sandy loam or sandy loam
Reaction: slightly or moderately alkaline

Torriarents

Depth class: Very deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Mine spoil or earthen fill
Elevation: 3,500 to 5,000 feet
Precipitation: 10 to 17 inches
Slope: 2 to 20 percent

Typical pedon: Torriarents, about 1,200 feet east and 1,300 feet south of the northwest corner of sec. 16, T. 43 N., R. 70 W.; USGS Reno Reservoir, WY topographic quadrangle; latitude 43 degrees 42 minutes 18 seconds north; longitude 105 degrees 16 minutes 35 seconds west; Southern Campbell County

A—0 to 4 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots throughout; slightly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

C1—4 to 42 inches; very pale brown (10YR 7/3) clay loam, pale brown (10YR 6/3) moist; massive; hard, firm, moderately sticky and moderately plastic; common very fine and fine roots throughout; 10% by volume argillic horizon fragments with few fine distinct brown (10YR 4/3) clay films on ped faces; strongly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

C2—42 to 60 inches; light gray (10YR 7/2) clay loam, light brownish gray (10YR 6/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots throughout; strongly effervescent (pH 8.0); moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Texture: highly variable within short distances and ranges from fine sandy loam, loam, or clay loam
Reaction: neutral to moderately alkaline

C horizon:
Texture: highly variable within short distances and ranges from fine sandy loam, loam, clay loam, or sandy clay loam
Reaction: neutral to moderately alkaline

Torriorthents

Depth class: Very deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Mine spoil or earthen fill
Elevation: 3,300 to 5,000 feet
Precipitation: 10 to 17 inches
Slope: 2 to 20 percent

Typical pedon: Torriorthents, about 200 feet west and 1,900 feet north of the southeast corner of sec. 28, T. 50 N., R. 71 W.; USGS Gillette East, WY topographic quadrangle; latitude 44 degrees 16 minutes 54 seconds north; longitude 105 degrees 23 minutes 19 seconds west; Southern Campbell County

A—0 to 5 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots throughout; slightly effervescent; moderately alkaline; clear smooth boundary.

C1—5 to 44 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; massive; hard, firm, moderately sticky and moderately plastic; common very fine and fine roots throughout; strongly effervescent; moderately alkaline; clear smooth boundary.

C2—44 to 60 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Texture: highly variable within short distances and ranges from fine sandy loam, loam, or clay loam
Reaction: neutral to moderately alkaline

C horizon:
Texture: highly variable within short distances and ranges from fine sandy loam, loam, clay loam, or sandy clay loam
Reaction: neutral to moderately alkaline

Tullock Series

Depth class: Moderately deep
Drainage class: Excessively drained
Landform: Hills and ridges
Parent material: Alluvium and/or eolian deposits over residuum
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 6 to 30 percent

Taxonomic class: Mixed, mesic Ustic Torripsamments

Typical pedon: Tullock loamy sand, about 2,100 feet west and 2,500 feet south of the northeast corner of sec. 31, T. 46 N., R. 74 W.; Southern Campbell County

A—0 to 4 inches; brown (10YR 5/3) loamy sand, brown (10YR 4/3) moist; single grain; loose, friable, nonsticky and nonplastic; noneffervescent; neutral; clear smooth boundary.

C—4 to 28 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 5/3) moist; single grain; soft, friable, nonsticky and nonplastic; carbonates are disseminated throughout; slightly effervescent; slightly alkaline; clear smooth boundary.

Cr—28 to 60 inches; soft calcareous sandstone.

Range in Characteristics:

Depth to bedrock: 20 to 40 inches
Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: neutral or slightly alkaline

C horizon:
Texture: sand, loamy sand, or loamy fine sand
Reaction: slightly or moderately alkaline

Turnercrest Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium and/or eolian deposits over residuum
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 6 to 30 percent

Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents

Typical pedon: Turnercrest fine sandy loam, about 900 feet south and 1,100 feet west of the northeast corner of sec. 7, T. 42 N., R. 73 W.; Southern Campbell County

A—0 to 2 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 4/3) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and very fine roots; calcium carbonate disseminated; strongly effervescent, moderately alkaline; clear smooth boundary.

Bk1—2 to 7 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many fine and very fine roots; calcium carbonate disseminated; strongly effervescent, moderately alkaline; clear wavy boundary.

Bk2—7 to 32 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few fine roots; calcium carbonate disseminated; slightly effervescent, moderately alkaline; gradual wavy boundary.

Cr—32 to 60 inches; soft, medium and fine grained sandstone.

Range in Characteristics:

Depth to paralithic contact: 20 to 40 inches
Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: neutral to moderately alkaline

Bk horizon:
Texture: fine sandy loam or sandy loam
Reaction: slightly or moderately alkaline

Twilight Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 3 to 30 percent

Taxonomic class: Coarse-loamy, mixed, superactive, frigid Haplocalcidic Haplustepts

Typical pedon: Twilight fine sandy loam, in an area of Toby-Twilight-Blacksheep fine sandy loams, 3 to 30 percent slopes, about 900 feet east and 2,350 feet south of the northwest corner of sec. 19, T. 57 N., R. 73 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 54 minutes 37 seconds north; longitude 105 degrees 41 minutes 30 seconds west

A—0 to 5 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; common fine low continuity vesicular pores; noneffervescent; neutral; clear smooth boundary.

Bw—5 to 20 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots throughout; common fine low continuity pores; noneffervescent; neutral; gradual wavy boundary.

Bk—20 to 29 inches; light yellowish brown (2.5Y 6/3) fine sandy loam, light olive brown (2.5Y 5/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots throughout; common fine low continuity pores; carbonates are disseminated throughout; slightly effervescent; slightly alkaline; clear wavy boundary.

Cr—29 to 60 inches; slightly effervescent; moderately alkaline; soft calcareous sandstone.

Range in Characteristics:

Depth to paralithic: 20 to 40 inches
Depth to an effervescent horizon: 10 to 20 inches

A horizon:
Reaction: neutral or slightly alkaline

Bw horizon:
Texture: fine sandy loam or sandy loam
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: fine sandy loam or sandy loam
Reaction: slightly or moderately alkaline

Twotop Series

Depth class: Very deep and deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 6 percent

Taxonomic class: Very-fine, smectitic, mesic Aridic Haplusterts

Typical pedon: Twotop clay, in an area of Winler-Twotop clays, 0 to 6 percent slopes, about 525 feet west and 1,950 feet north of the southeast corner of sec. 24, T. 56 N., R. 69 W.; USGS Bonnie Reservoir, WY topographic quadrangle; latitude 44 degrees 49 minutes 15 seconds north; longitude 105 degrees 4 minutes 41 seconds west

A—0 to 3 inches; dark grayish brown (2.5Y 4/2) clay, very dark grayish brown (2.5Y 3/2) moist; strong thick platy structure; very hard, friable, moderately sticky and very plastic; many very fine and fine and common medium roots throughout; common very fine and fine pores; noneffervescent; neutral; clear smooth boundary.

Bss—3 to 14 inches; olive brown (2.5Y 4/3) clay, dark olive brown (2.5Y 3/3) moist; strong medium and coarse angular blocky structure parting to moderate fine and medium wedge-shaped aggregates; very hard, friable, very sticky and very plastic; many very fine and fine and common medium roots throughout; many very fine and fine pores; few distinct discontinuous dark olive brown (2.5Y 3/3) intersecting slickensides on vertical faces of peds; slightly effervescent; slightly alkaline; gradual wavy boundary.

Bssyz—14 to 27 inches; olive brown (2.5Y 4/3) clay, dark olive brown (2.5Y 3/3) moist; strong medium and coarse angular blocky structure parting to moderate fine and medium wedge-shaped aggregates; very hard, friable, very sticky and very plastic; many very fine and fine roots throughout; many very fine and fine pores; few distinct discontinuous dark olive brown (2.5Y 3/3) intersecting slickensides on vertical faces of peds; common fine rounded light gray (10YR 7/2) masses of gypsum throughout; slightly effervescent; slightly alkaline; clear wavy boundary.

Cyz—27 to 60 inches; dark grayish brown (2.5Y 4/2) clay, very dark grayish brown (2.5Y 3/2) moist; strong medium and coarse angular blocky structure; hard, friable, moderately sticky and very plastic; common very fine and fine roots throughout; common very fine and fine pores; common fine rounded light gray (10YR 7/2) masses of gypsum throughout; slightly effervescent; neutral.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 10 inches
Depth to a horizon containing gypsum and other salts: 10 and 20 inches

A horizon:
Reaction: neutral or slightly alkaline

Bss horizon:
Reaction: neutral or slightly alkaline
Sodium Adsorption Ratio: 0 to 5

Bssyz horizon:
Reaction: neutral to moderately alkaline
Sodium Adsorption Ratio: 3 to 10
Electrical Conductivity: 0 to 2 millimhos per centimeter

Cyz horizon
Reaction: neutral to moderately alkaline
Sodium Adsorption Ratio: 3 to 10
Electrical Conductivity: 2 to 4 millimhos per centimeter

Ucross Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 50 percent

Taxonomic class: Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents

Typical pedon: Ucross loam, in an area of Ucross-Iwait-Fairburn loams, 3 to 30 percent slopes, about 50 feet south and 900 feet east of the northwest corner sec. 10, T. 55 N., R. 74 W.; USGS Reservoir Creek WY topographic quadrangle; latitude 44 degrees 45 minutes 58 seconds north; longitude 105 degrees 45 minutes 34 seconds west.

A—0 to 5 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; moderate fine and medium granular structure; slightly hard, firm, nonsticky and nonplastic; many very fine and fine and common medium roots throughout; many fine pores; slightly effervescent; moderately alkaline; clear smooth boundary.

Bk1—5 to 17 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; many very fine and fine and common medium roots throughout; many fine pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk2—17 to 31 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; many very fine and fine roots throughout; common fine pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; strongly alkaline; abrupt wavy boundary.

Cr—31 to 60 inches; light yellowish brown (10YR 6/4) soft calcareous shale interbedded with mudstones and sandstone.

Range in Characteristics:

Depth to bedrock: 20 to 40 inches
Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: neutral to moderately alkaline

Bk horizon:
Texture: loam or clay loam
Reaction: slightly or moderately alkaline

Ulm Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, stream terraces, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 0 to 15 percent

Taxonomic class: Fine, smectitic, mesic Ustic Haplargids

Typical pedon: Ulm clay loam, 2,300 feet west and 2,500 feet north of the southeast corner of sec. 21, T. 48 N., R. 72 W.; latitude 44 degrees 7 minutes 17 seconds north; longitude 105 degrees 30 minutes 45 seconds west; Southern Campbell County

A—0 to 4 inches; grayish brown (10YR 5/2) clay loam, dark grayish brown (10YR 4/2) moist; strong fine granular structure; slightly hard, friable, sticky and plastic; many fine and few medium roots; neutral (pH 7.0); clear smooth boundary.

Bt—4 to 15 inches; brown (10YR 5/3) clay, brown (10YR 4/3) moist; strong coarse prismatic structure parting to strong medium and coarse angular blocky; very hard, very firm, very sticky and very plastic; common fine and few medium roots; many prominent clay films on faces of peds; neutral (pH 7.2); clear wavy boundary.

Btk—15 to 25 inches; brown (10YR 5/3) clay, brown (10YR 4/3) moist; moderate medium prismatic sstructure parting to strong medium angular blocky; very hard, firm, very sticky and very plastic; common fine and few medium roots; common distinct clay films on faces of peds;calcium carbonate mostly disseminated with few prominent masses; slightly effervescent; slightly alkaline (pH 7.6); clear wavy boundary.

Bk1—25 to 33 inches; pale brown (10YR 6/3) clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few fine and medium roots; calcium carbonate as common distinct masses, seams and streaks; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Bk2—33 to 60 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; massive; hard, firm, sticky and plastic; calcium carbonate as common distinct masses, seams and streaks; 5 percent partially weathered shale and sandstone channery fragments; moderately alkaline (pH 8.4).

Range in Characteristics:

Depth to an effervescent horizon: 12 to 33 inches

A horizon:
Texture: clay loam or loam

Bt horizon:
Texture: clay or clay loam
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: clay, clay loam or loam
Reaction: moderately or strongly alkaline

Ustic Torriorthents

Depth class: Moderately deep to deep
Drainage class: Well and excessively drained
Landform: Hills and ridges
Parent material: Alluvium and/or residuum
Elevation: 3,500 to 5,200 feet

Precipitation: 10 to 17 inches
Slope: 10 to 80 percent

Taxonomic class: Ustic Torriorthents

A—0 to 4 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak fine granular structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine and fine roots throughout; slightly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

Bk—4 to 35 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots throughout; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Cr—35 to 60 inches; weathered shale bedrock.

Range in Characteristics:

Depth to paralithic contact: 20 to 60 inches
Depth to an effervescent horizon: 0 to 6 inches
Rock fragments: 0 to 10 percent

A horizon:
Texture: highly variable within short distances and ranges from fine sandy loam, loam, or clay loam
Reaction: neutral to moderately alkaline

Bk horizon:
Texture: highly variable within short distances and ranges from clay loam, loam, clay, fine sandy loam, sandy loam, or sandy clay loam
Reaction: neutral to moderately alkaline

Valent Series

Depth class: Very deep
Drainage class: Excessively drained
Landform: Dunes
Parent material: Eolian deposits
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 3 to 15 percent

Taxonomic class: Mixed, mesic Aridic Ustipsamments

Typical pedon: Valent loamy sand, in an area of Valent-Duneland complex, 3 to 15 percent slopes, about 2,200 feet west and 1,200 feet north of the southeast corner of sec. 29, T. 55 N., R. 73 W.; USGS Recluse, WY topographic quadrangle; latitude 44 degrees 42 minutes 42 seconds north; longitude 105 degrees 40 minutes 1 second west

A—0 to 3 inches; brown (10YR 4/3) loamy fine sand, dark brown (10YR 3/3) moist; moderate thin platy structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; common fine low continuity vesicular pores; noneffervescent; neutral; clear smooth boundary.

C1—3 to 9 inches; brown (10YR 4/3) loamy fine sand, dark brown (10YR 3/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; common fine low continuity interstitial pores; noneffervescent; neutral; clear wavy boundary.

C2—9 to 23 inches; brown (10YR 5/3) loamy fine sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; common fine low continuity interstitial pores; noneffervescent; neutral; clear wavy boundary.

C3—23 to 60 inches; brown (10YR 5/3) loamy fine sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots throughout; noneffervescent; neutral.

Range in Characteristics:

Note: This soil is slightly moister than is definitive of the Valent series. This difference does not significantly affect its usefulness or behavior.

A horizon:
Reaction: neutral to slightly alkaline

C horizon:
Texture: sand or loamy sand
Reaction: neutral to slightly alkaline

Vanstel Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans and fan remnants
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 0 to 6 percent

Taxonomic class: Fine-silty, mixed, superactive, frigid Aridic Haplustalfs

Typical pedon: Vanstel silt loam in an area of Vanstel-Pinehill complex, 0 to 6 percent slopes, about 1,000 feet west and 1,800 feet north of the southeast corner of sec. 24, T. 58 N., R. 74 W.; USGS Corral Creek, WY topographic quadrangle; latitude 44 degrees 59 minutes 39 seconds north; longitude 105 degrees 41 minutes 58 seconds west.

A—0 to 4 inches; light olive brown (2.5Y 5/3) silt loam, olive brown (2.5Y 4/3) moist; moderate medium platy structure parting to weak fine granular; slightly hard, very friable, slightly sticky and moderately plastic; many fine roots throughout; many fine low continuity vesicular pores; noneffervescent; neutral; clear smooth boundary.

Bt—4 to 14 inches; olive brown (2.5Y 5/3) silty clay loam, olive brown (2.5Y 4/3) moist; moderate medium and coarse prismatic structure parting to moderate fine and medium angular blocky; hard, friable, moderately sticky and moderately plastic; many fine roots throughout; many fine low continuity pores; few distinct discontinuous dark olive brown (2.5Y 3/3) clay films on faces of peds; noneffervescent; neutral; gradual wavy boundary.

Btk—14 to 19 inches; light olive brown (2.5Y 5/3) silty clay loam, olive brown (2.5Y 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; hard, friable, moderately sticky and moderately plastic; many fine roots throughout; many fine low continuity pores; few distinct discontinuous dark olive brown (2.5Y 3/3) clay films on faces of peds; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bk1—19 to 32 inches; light olive brown (2.5Y 5/3) silty clay loam, olive brown (2.5Y 4/3) moist; moderate fine and medium angular blocky structure; hard, friable, moderately sticky and moderately plastic; common fine roots throughout; many fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk2—32 to 60 inches; light yellowish brown (2.5Y 6/3) silt loam, olive brown (2.5Y 4/3) moist; moderate fine and medium angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots throughout; common fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 10 to 21 inches
Rock fragments: 0 to 5 percent

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: silty clay loam or clay loam
Reaction: neutral or moderately alkaline

Bk horizon:
Texture: silt loam or silty clay loam

Volborg Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Residuum from acid shale
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 3 to 60 percent

Taxonomic class: Clayey, smectitic, acid, frigid, shallow Aridic Ustorthents

Typical pedon: Volborg clay, in an area of Cabbart-Volborg-Badland complex, wooded, 3 to 60 percent slopes, about 1,350 feet west and 1,250 feet north of the southeast corner of sec. 35, T. 58 N., R. 72 W.; USGS Rocky Butte, WY topographic quadrangle; latitude 44 degrees 58 minutes 17 seconds north; longitude 105 degrees 29 minutes 3 seconds west

A—0 to 2 inches; grayish brown (2.5Y 5/2) silty clay loam, dark grayish brown (2.5Y 4/2) moist; strong medium angular blocky structure; hard, firm, moderately sticky and moderately plastic; common fine and medium roots throughout; common fine low continuity vesicular pores; noneffervescent; moderately acid; clear smooth boundary.

Cy—2 to 15 inches; grayish brown (2.5Y 5/2) clay, dark grayish brown (2.5Y 4/2) moist; strong medium angular blocky structure; hard, firm, very sticky and very plastic; common very fine, fine, and medium roots throughout; many fine low continuity pores; common fine irregular white (10YR 8/1) nests of gypsum throughout; noneffervescent; slightly acid; clear wavy boundary.

Cr—15 to 60 inches; acid shale bedrock.

Range in Characteristics:

Depth to bedrock: 10 to 20 inches
Pararock fragments: 0 to 15 percent

A horizon:
Reaction: moderately or slightly acid

C horizon:
Texture: clay, silty clay, or clay loam
Reaction: strongly to slightly acid

Vonalee Series

Depth class: Very deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium and/or eolian deposits
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 2 to 15 percent

Taxonomic class: Coarse-loamy, mixed, superactive, mesic Ustic Haplargids

Typical pedon: Vonalee fine sandy loam; about 600 feet east and 250 feet north of the southwest corner of sec. 9, T. 41 N., R. 72 W.; USGS Turnercrest, SE, WY topographic quadrangle; latitude 43 degrees 2 minutes 2 seconds north; longitude 105 degrees 1 minutes 15 seconds west; Southern Campbell County

A—0 to 3 inches; yellowish brown (10YR 5/4) fine sandy loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium roots throughout; noneffervescent; neutral; clear smooth boundary.

Bt1—3 to 12 inches; yellowish brown (10YR 5/4) fine sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium roots throughout; few distinct discontinuous dark brown (10YR 3/3) clay bridging between sand grains; noneffervescent; neutral; clear smooth boundary.

Bt2—12 to 24 inches; light yellowish brown (10YR 6/4) fine sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; few distinct discontinuous dark brown (10YR 3/3) clay bridging between sand grains; noneffervescent; slightly alkaline; clear smooth boundary.

Bk1—24 to 29 inches; light yellowish brown (10YR 6/4) fine sandy loam, yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; carbonates are disseminated throughout; slightly effervescent; slightly alkaline; clear smooth boundary.

Bk2—29 to 60 inches; very pale brown (10YR 7/3) fine sandy loam, pale brown (10YR 6/3) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; few fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 11 to 40 inches

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: fine sandy loam or sandy loam
Reaction: neutral or slightly alkaline

Bk horizon:
Texture: fine sandy loam or sandy loam
Reaction: slightly or moderately alkaline

Vonalf Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, hills, and ridges
Parent material: Alluvium and/or eolian deposits
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Coarse-loamy, mixed, superactive, mesic Aridic Haplustalfs

Typical pedon: Vonalf fine sandy loam, about 200 feet east and 2,440 feet north of the southwest corner of sec. 7, T. 48 N., R. 73 W.; USGS Four Bar J Ranch, WY topographic quadrangle; latitude 44 degrees 9 minutes 6 seconds north; longitude 105 degrees 41 minutes 18 seconds west; Southern Campbell County

A—0 to 6 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine and medium subangular blocky structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; slightly alkaline (pH 7.4); clear smooth boundary.

Bt1—6 to 16 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium prismatic structure parting to weak medium subangular blocky; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; common distinct discontinuous brown (10YR 4/3) clay bridges between sand grains; slightly alkaline (pH 7.8); clear smooth boundary.

Bt2—16 to 34 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common distinct discontinuous brown (10YR 4/3) clay bridges between sand grains; slightly alkaline (pH 7.8); clear smooth boundary.

Bk—34 to 60 inches; light yellowish brown (2.5Y 6/4) fine sandy loam, olive brown (2.5Y 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; strongly effervescent; few fine irregular light gray (10YR 7/2) carbonate threads; few fine rounded light gray (10YR 7/2) carbonate masses; moderately alkaline (pH 8.2).

Range in Characteristics:

Depth to an effervescent horizon: commonly 14 to 40 inches, but more than 40 inches in a few pedons

A horizon:
Reaction: neutral or slightly alkaline

Bt horizon:
Texture: fine sandy loam or sandy loam
Reaction: neutral or slightly alkaline

Bk or C horizon:
Texture: fine sandy loam or sandy loam
Reaction: slightly or moderately alkaline

Wags Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum from non-acid shale
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 3 to 30 percent

Taxonomic class: Fine, smectitic, non-acid, mesic Ustic Torriorthents

Typical pedon: Wags clay loam, about 200 feet east and 1,050 feet north of the southwest corner of sec. 35, T. 44 N., R. 69 W.; Southern Campbell County

A—0 to 1 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; weak medium subangular blocky structure; very hard, firm, moderately sticky and moderately plastic; many very fine and fine roots throughout; noneffervescent; 10 percent angular shale channery fragments; neutral; abrupt smooth boundary.

C1—1 to 11 inches; light brownish gray (2.5Y 6/2) silty clay, grayish brown (2.5Y 5/2) moist; massive; extremely hard, very firm, very sticky and very plastic; many very fine and fine and common medium and coarse roots throughout; noneffervescent; 5 percent angular shale channery fragments; slightly acid; clear wavy boundary.

C2—11 to 23 inches; light brownish gray (2.5Y 6/2) silty clay, grayish brown (2.5Y 5/2) moist; massive; very hard, firm, moderately sticky and moderately plastic; common very fine to medium roots throughout; noneffervescent; 5 percent angular shale channery fragments; slightly acid; clear wavy boundary.

Cr—23 to 60 inches; soft nonacid shale.

Range in Characteristics:

Depth to paralithic contact: 20 to 40 inches
Rock fragments: 0 to 10 percent
Note: Some pedons have up to 25 percent pebbles on the surface.

A horizon:
Reaction: neutral to slightly alkaline

C horizon:
Texture: clay or clay loam
Reaction: slightly acid to slightly alkaline

Wibaux Series

Depth class: Very deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium and/or colluvium derived from porcelanite
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 14 inches
Slope: 6 to 40 percent

Taxonomic class: Loamy-skeletal over fragmental, mixed, superactive, nonacid, mesic Ustic Torriorthents

Typical pedon: Wibaux channery loam, about 1,600 feet west and 150 feet south of the northeast corner of sec. 14, T. 41 N., R. 70 W.; USGS Piney Canyon SW, WY topographic quadrangle; latitude 43 degrees 32 minutes 3 seconds north; longitude 105 degrees 12 minutes 42 seconds west; Southern Campbell County

A—0 to 3 inches; reddish brown (5YR 5/4) channery fine sandy loam, reddish brown (5YR 4/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; noneffervescent; 25 percent angular scoria channery fragments; slightly alkaline; clear wavy boundary.

C—3 to 16 inches; reddish brown (5YR 5/4) very channery loam, reddish brown (5YR 4/4) moist; massive; soft, friable, slightly sticky and slightly plastic; noneffervescent; 55 percent angular scoria channery fragments; slightly alkaline; clear wavy boundary.

2C—16 to 60 inches; fractured porcelanite.

Range in Characteristics:

Depth to the 2C horizon: from 7 to 20 inches
Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: neutral or slightly alkaline
Rock fragments: 15 to 35 percent, with 15 to 35 percent channery fragments and 0 to 5 percent flagstones

C horizon:
Texture: very channery loam or extremely channery loam
Reaction: neutral or slightly alkaline
Rock fragments: 35 to 90 percent, with 0 to 15 percent flagstones and 0 to 5 percent stones

2C horizon:
Reaction: neutral or slightly alkaline
Rock fragments: 90 to 100 percent with 80 to 95 percent channery fragments, 0 to 15 percent flagstones, and 0 to 5 percent stones

Winler Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 4,500 feet
Precipitation: l5 to l7 inches
Slope: 0 to 6 percent

Taxonomic class: Very-fine, smectitic, mesic Aridic Leptic Haplusterts

Typical pedon: Winler clay, in an area of Winler-Twotop clays, 0 to 6 percent slopes, about 600 feet north and 100 feet west of the southeast corner of sec. 12, T. 56 N., R. 69 W.; USGS Bonnie Reservoir, WY topographic quadrangle; latitude 44 degrees 50 minutes 41 seconds north; longitude 105 degrees 4 minutes 34 seconds west

A—0 to 4 inches; dark grayish brown (2.5Y 4/2) clay, very dark grayish brown (2.5Y 3/2) moist; strong medium angular blocky structure parting to moderate fine and medium angular blocky; very hard, very firm, very sticky and very plastic; many very fine and fine roots throughout; common fine pores; noneffervescent; neutral; clear smooth boundary.

Bss—4 to 12 inches; olive brown (2.5Y 4/3) clay, dark olive brown (2.5Y 3/3) moist; strong medium and coarse angular blocky structure parting to moderate fine and medium wedge-shaped aggregates; very hard, very firm, very sticky and very plastic; many very fine and fine roots throughout; common fine pores; few distinct discontinuous dark olive brown (2.5Y 3/3) intersecting slickensides on vertical faces of peds; few fine threads and light gray (10YR 7/2) masses of gypsum throughout; common fine threads and white (10YR 8/1) salt masses throughout; slightly effervescent; slightly alkaline; clear wavy boundary.

Bssyz—12 to 24 inches; light olive brown (2.5Y 5/3) clay, olive brown (2.5Y 4/3) moist; strong medium and coarse angular blocky structure parting to moderate fine and medium wedge-shaped aggregates; extremely hard, very firm, very sticky and very plastic; common very fine and fine roots throughout; common fine pores; few distinct discontinuous dark olive brown (2.5Y 3/3) intersecting slickensides on vertical faces of peds; common fine threads and light gray (10YR 7/2) masses of gypsum throughout; common fine threads and white (10YR 8/1) salt masses throughout; slightly effervescent; slightly alkaline; gradual wavy boundary.

C—24 to 32 inches; light olive brown (2.5Y 5/3) clay, olive brown (2.5Y 4/3) moist; moderate fine and medium wedge-shaped aggregates structure parting to massive; very hard, very firm, very sticky and very plastic; common fine pores; common fine threads and light gray (10YR 7/2) gypsum crystals throughout; common fine threads and white (10YR 8/1) salt masses throughout; slightly effervescent; slightly alkaline; clear wavy boundary.

Cr—32 to 60 inches; soft shale that is inconsistently effervescent.

Range in Characteristics:

Depth to paralithic contact: 20 to 40 inches
Depth to a horizon containing salt and gypsum: 8 to l7 inches
Rock fragments: 0 to 5 percent

A horizon:
Reaction: slightly acid to slightly alkaline

Bss horizon:
Reaction: slightly acid to slightly alkaline
Sodium Adsorption Ratio: 0 to 5

Bssyz horizon:
Reaction: slightly acid to slightly alkaline
Sodium Adsorption Ratio: 3 to 10
Electrical Conductivity: 0 to 2 millimhos per centimeter

C horizon:
Reaction: medium acid to moderately alkaline
Sodium Adsorption Ratio: 3 to 10
Electrical Conductivity: 2 to 4 millimhos per centimeter

Worf Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Residuum
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 6 to 15 percent

Taxonomic class: Loamy, mixed, superactive, mesic, shallow Ustic Haplargids

Typical pedon: Worf loam, about 300 feet west and 2,380 feet south of the northeast corner of sec. 25, T. 46 N., R. 76 W.; Southern Campbell County

A—0 to 2 inches; brown (10YR 5/3) loam, dark brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; neutral; clear smooth boundary.

Bt—2 to 10 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common distinct clay films on faces of peds; slightly alkaline; clear smooth boundary.

Bk—10 to 18 inches; light yellowish brown (2.5Y 6/4) loam, light olive brown (2.5Y 5/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common fine and few very fine roots; calcium carbonate disseminated; strongly effervescent, moderately alkaline; clear smooth boundary.

Cr—18 to 60 inches; soft, effervescent sandy shale.

Range in Characteristics:

Depth to paralithic contact: 10 to 20 inches
Depth to an effervescent horizon: 5 to 12 inches

A horizon:
Reaction: neutral to slightly alkaline

Bt horizon:
Texture: loam, clay loam, or sandy clay
Reaction: neutral to slightly alkaline

Bk horizon:
Texture: loam, clay loam, or sandy clay
Reaction: moderately to strongly alkaline
Pararock fragments: 0 to 10 percent shale fragments

Worfka Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium over residuum
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 0 to 15 percent

Taxonomic class: Clayey, smectitic, calcareous, mesic, shallow Ustic Haplargids

Typical pedon: Worfka clay loam, about 1,700 feet east and 2,490 feet north of the southwest corner of sec. 5, T. 48 N., R. 70 W.; Southern Campbell County

A—0 to 2 inches; light brownish gray (10YR 6/2) clay loam, dark grayish brown (10YR 4/2) moist; moderate fine granular structure; hard, friable, moderately sticky and moderately plastic; noneffervescent; neutral; clear smooth boundary.

Bt—2 to 7 inches; grayish brown (10YR 5/2) clay, dark grayish brown (10YR 4/2) moist; moderate fine and medium angular blocky structure; very hard, firm, moderately sticky and moderately plastic; few distinct discontinuous dark brown

(10YR 3/3) clay films on faces of peds and in pores; noneffervescent; slightly alkaline; clear smooth boundary.

Btk—7 to 13 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; strong medium angular blocky structure; very hard, firm, moderately sticky and moderately plastic; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk—13 to 19 inches; light brownish gray (10YR 6/2) clay loam, grayish brown (10YR 5/2) moist; moderate coarse subangular blocky structure; very hard, firm, moderately sticky and moderately plastic; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Cr—19 to 60 inches; soft calcareous shale.

Range in Characteristics:

Depth to the paralithic contact: 10 to 20 inches
Depth to an effervescent horizon: 5 to 9 inches
Rock fragments: 0 to 10 percent

A horizon:
Reaction: neutral to slightly alkaline

Bt horizon:
Texture: clay or clay loam

Bk horizon:
Texture: clay or clay loam

Wyarno Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans and fan remnants
Parent material: Alluvium
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 0 to 6 percent

Taxonomic class: Fine, smectitic, mesic Ustic Haplargids

Typical pedon: Wyarno clay loam, NW1/4, SE1/4 of sec. 10, T. 56 N., R. 83 W.; Sheridan County

A—0 to 5 inches; light brownish gray (10YR 6/2) clay loam, dark grayish brown (10YR 4/2) moist; moderate coarse granular structure; soft, very friable, slightly sticky and slightly plastic; noneffervescent; neutral; clear smooth boundary.

Bt1—5 to 9 inches; light brownish gray (10YR 6/2) silty clay loam, dark grayish brown (10YR 4/2) moist; moderate subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; noneffervescent; neutral; clear smooth boundary.

Bt2—9 to 12 inches; grayish brown (10YR 5/2) clay loam, dark grayish brown (10YR 4/2) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, friable, moderately sticky and moderately plastic; common distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; slightly alkaline; clear smooth boundary.

Btk—12 to 15 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; weak medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; few faint discontinuous dark grayish brown (2.5Y 4/2) clay films on faces of peds and in pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; gradual smooth boundary.

Bk1—15 to 36 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; massive; hard, friable, moderately sticky and moderately plastic; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; gradual smooth boundary.

Bk2—36 to 60 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, very friable, moderately sticky and moderately plastic; few fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 12 to 33 inches

Bt horizon:
Texture: clay loam, silty clay loam, or clay

Bk horizon:
Texture: clay loam
Reaction: moderately alkaline

Wyotite Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans and fan remnants
Parent material: Alluvium and/or eolian deposits
Elevation: 3,500 to 5,200 feet
Precipitation: 10 to 14 inches
Slope: 0 to 6 percent

Taxonomic class: Fine-silty, mixed, superactive, mesic Ustic Haplargids

Typical pedon: Wyotite silt loam, about 250 feet south and 250 feet east of the northwest corner of sec. 33, T. 43 N., R. 75 W.; Southern Campbell County

A—0 to 2 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; moderate very fine and fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; noneffervescent; slightly acid; abrupt smooth boundary.

Bt1—2 to 5 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure parting to moderate thick platy; slightly hard, friable, moderately sticky and moderately plastic; many very fine and fine roots throughout; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; noneffervescent; slightly acid; clear wavy boundary.

Bt2—5 to 13 inches; light yellowish brown (10YR 6/4) silty clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure parting to strong fine and medium angular blocky; hard, friable, moderately sticky and moderately plastic; many very fine and fine roots throughout; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; noneffervescent; neutral; abrupt wavy boundary.

Btk—13 to 22 inches; light brownish gray (2.5Y 6/2) silty clay loam, olive brown (2.5Y 4/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, friable, moderately sticky and moderately plastic; many very fine and fine roots throughout; few distinct discontinuous dark olive brown (2.5Y 3/3) clay films on faces of peds and in pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; slightly alkaline; clear wavy boundary.

Bk1—22 to 38 inches; pale yellow (2.5Y 7/4) silty clay loam, light olive brown (2.5Y 5/4) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and moderately plastic; many very fine and fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk2—38 to 60 inches; light yellowish brown (2.5Y 6/4) silt loam, light olive brown (2.5Y 5/4) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 10 to 20 inches

A horizon:
Reaction: slightly acid to neutral

Bt horizon:
Texture: silty clay loam or clay loam
Reaction: slightly acid to neutral

Bk horizon:
Texture: silt loam, loam, or silty clay loam
Reaction: moderately alkaline

Xema Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Alluvium and/or eolian deposits
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 3 to 30 percent

Taxonomic class: Coarse-loamy, mixed, superactive, mesic Aridic Haplustalfs

Typical pedon: Xema fine sandy loam, about 300 feet east and 2,350 feet north of the southwest corner of sec. 26, T. 55 N., R. 69 W.; USGS Brislawn School, WY topographic quadrangle; latitude 44 degrees 43 minutes 14 seconds north; longitude 105 degrees 7 minutes 28 seconds west

A—0 to 4 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak fine angular blocky structure parting to weak thin platy; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium roos throughout; many fine low continuity vesicular and tubular pores; noneffervescent; neutral; clear smooth boundary.

Bt1—4 to 13 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak medium prismatic structure parting to weak fine angular blocky; soft, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; many fine low continuity vesicular and tubular pores; common distinct continuous dark brown (10YR 3/3) clay bridging between sand grains; noneffervescent; neutral; clear wavy boundary.

Bt2—13 to 22 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium angular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; many fine low continuity vesicular and tubular pores; few distinct discontinuous dark yellowish brown (10YR 3/4) clay bridging between sand grains; noneffervescent; slightly alkaline; clear wavy boundary.

Bk—22 to 31 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium angular blocky structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; many very fine and fine roots throughout; common fine low continuity vesicular and tubular pores; carbonates are disseminated throughout; slightly effervescent; moderately alkaline; clear wavy boundary.

Cr—31 to 60 inches; slightly effervescent; moderately alkaline; soft calcareous sandstone.

Range in Characteristics:

Depth to paralitic contact: 20 to 40 inches
Depth to an effervescent horizon: 12 to 30 inches

A or E horizon:
Reaction: slightly acid or slightly alkaline

Bt horizon:
Texture: fine sandy loam or sandy loam
Reaction: neutral or slightly alkaline

Bk or C horizon:
Texture: fine sandy loam or sandy loam
Note: In some pedons, the Bk horizon is absent and the C horizon has a slightly acid to slightly alkaline reaction.

Yamacall Series

Depth class: Very deep
Drainage class: Well drained
Landform: Fan remnants, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 15 to 17 inches
Slope: 3 to 20 percent

Taxonomic class: Fine-loamy, mixed, superactive frigid Aridic Haplustepts

Typical pedon: Yamacall loam in an area of Delpoint-Yamacall-Cabbart loams, 3 to 30 percent slopes, about 700 feet west and 300 feet south of the northeast corner of sec. 27, T. 58 N., R. 72 W.; USGS Rocky Butte, WY topographic quadrangle; latitude 44 degrees 58 minutes 50 seconds north; longitude 105 degrees 29 minutes 58 seconds west.

A—0 to 3 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; common fine roots throughout; many fine low continuity vesicular pores; very slightly effervescent; slightly alkaline; clear smooth boundary.

Bw—3 to 15 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots throughout; many fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; slightly alkaline; clear wavy boundary.

Bk—15 to 60 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots throughout; common fine low continuity pores; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline.

Range in Characteristics:

Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: neutral to mildly alkaline

Bw horizon:
Texture: loam or clay loam
Reaction: neutral to moderately alkaline

Bk horizon:
Texture: loam or clay loam

Yawdim Series

Depth class: Shallow
Drainage class: Well drained
Landform: Hills and ridges
Parent material: Residuum and alluvium over residuum
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 3 to 45 percent

Taxonomic class: Clayey, smectitic, calcareous, frigid, shallow Aridic Ustorthents

Typical pedon: Yawdim clay loam, in an area of Megonot-Yawdim clay loams, 3 to 15 percent slopes; about 1,600 feet west and 1,100 feet south of the northeast corner of sec. 26, T. 58 N., R. 73 W.; USGS Homestead Draw, WY topographic quadrangle; latitude 44 degrees 49 minutes 11 seconds north, longitude 105 degrees 36 minutes 0 seconds west

A—0 to 3 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; hard, very firm, moderately sticky and moderately plastic; common fine roots throughout; common fine low continuity vesicular pores; carbonates are disseminated throughout; strongly effervescent; slightly alkaline; clear smooth boundary.

C—3 to 16 inches; pale brown (10YR 6/3) clay, brown (10YR 5/3) moist; massive; very hard, very firm, very sticky and very plastic; common fine roots throughout; many fine low continuity pores; carbonates are disseminated throughout; strongly effervescent; moderately alkaline; clear wavy boundary.

Cr—16 to 60 inches; soft calcareous shale interbedded with mudstone and sandstone.

Range in Characteristics:

Depth to bedrock: 10 to 20 inches
Depth to an effervescent horizon: 0 to 6 inches

A horizon:
Reaction: neutral or slightly alkaline

C horizon:
Texture: clay, silty clay, or clay loam
Reaction: slightly or moderately alkaline

Ziggy Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 4,800 feet
Precipitation: 15 to 17 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Aridic Haplustepts

Typical pedon: Ziggy loam, about 350 feet south and 1,300 feet west of the northeast corner of sec. 28, T. 50 N., R. 74 W.; USGS Jeffers Draw, WY topographic quadrangle; latitude 44 degrees 17 minutes 13 seconds north; longitude 105 degrees 45 minutes 27 seconds west; Southern Campbell County

A—0 to 5 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak fine platy structure parting to weak fine granular; soft, friable, nonsticky and slightly plastic; many very fine and fine roots; neutral (pH 6.8); abrupt smooth boundary.

Bw—5 to 14 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak medium prismatic structure parting to moderate medium and fine subangular blocky; slightly hard, friable, slightly sticky and moderately plastic; common very fine and fine roots; calcium carbonate disseminated; slightly effervescent, slightly alkaline (pH 7.6); clear smooth boundary.

Bk1—14 to 32 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; common fine irregularly shaped light gray (10YR 7/2) filaments and masses of calcium carbonate; strongly effervescent, moderately alkaline (pH 8.2); clear wavy boundary.

Bk2—32 to 60 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; massive; hard, friable, moderately sticky and moderately plastic; few very fine and fine roots; many fine irregularly shaped light gray (10YR 7/2) filaments and common fine rounded masses of calcium carbonate; strongly effervescent, moderately alkaline (pH 8.0).

Range in Characteristics:

Depth to an effervescent horizon: 0 to 8 inches

A horizon:
Texture: loam or silty loam
Reaction: neutral or slightly alkaline

Bw horizon:
Texture: loam, silty loam, clay loam, or silty clay loam
Reaction: slightly or moderately alkaline

Bk horizon:
Texture: loam, silty loam, clay loam, or silty clay loam

Zigweid Series

Depth class: Very deep
Drainage class: Well drained
Landform: Alluvial fans, fan remnants, hills, and ridges
Parent material: Alluvium
Elevation: 3,500 to 4,500 feet
Precipitation: 10 to 14 inches
Slope: 0 to 15 percent

Taxonomic class: Fine-loamy, mixed, superactive, mesic Ustic Haplocambids

Typical pedon: Zigweid loam, about 600 feet west and 450 feet south of the northeast corner of sec. 36, T. 56 N., R. 76 W.; USGS Kline Draw, WY topographic quadrangle; latitude 44 degrees 47 minutes 56 seconds north; longitude 105 degrees 56 minutes 45 seconds west

A—0 to 4 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; moderate fine and medium granular structure; slight hard, friable, nonsticky and nonplastic; many very fine and fine roots throughout; slightly effervescent; slightly alkaline (pH 7.4); clear smooth boundary.

Bw—4 to 17 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine and few medium roots throughout; carbonates are disseminated throughout; strongly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary.

Bk1—17 to 34 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

Bk2—34 to 60 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; strongly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics:

Depth to an effervescent horizon: 0 to 8 inches

A horizon:
Texture: fine sandy loam or loam
Reaction: neutral to moderately alkaline

Bw horizon:
Texture: loam or clay loam
Reaction: slightly or moderately alkaline

Bk horizon:
Texture: loam or clay loam
Reaction: moderately or strongly alkaline

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes.

Terms for the limitation classes are not limited, somewhat limited, and very limited. The suitability ratings are expressed as well suited, moderately suited, poorly suited, and unsuited or as good, fair, and poor.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

Paul Shelton, State Agronomist, Natural Resources Conservation Service

There are approximately 120,000 acres under cultivation, the majority of which is non-irrigated. Cropland constitutes less than 10 percent of the county. The low amount of growing-season precipitation and low number of growing degree-days limit the crop varieties grown.

For most of the area, the average annual precipitation is less than 14 inches with less than 5 inches of precipitation occurring in the period of April through July. Some of the area receives about 16 inches of precipitation with about 9 inches occurring in the period of April through July. Five years out of ten, the spring temperature will drop below 28° Fahrenheit sometime after May 5th. Similarly, five years out of ten, the fall temperature will drop below 28° Fahrenheit sometime before September 30th. There are only 4023 growing degree-days in the year.

The principal crops planted are winter wheat, spring wheat, barley, oats, alfalfa hay, and other hay. Small acreages may occasionally be planted to corn, millet or sunflower. In addition, approximately 17,000 acres are planted to permanent vegetation as part of the Conservation Reserve Program. There is no prime farmland in the soil survey area.

The primary considerations in managing dryland soils are moisture conservation, erosion control, and maintaining soil organic matter and fertility.

Moisture conservation in Campbell County means reducing evaporation, reducing surface runoff, increasing water intake, and controlling weeds. Typical management practices to achieve moisture conservation include the use of crop residue, contour farming, chiseling and subsoiling, and minimum tillage. Fallow is also a traditional practice that helps to control weeds. However, recent research indicates fallow’s merits as a moisture conserving practice has been oversold.

Wind erosion is a hazard on many of the soils in Campbell County. It is most severe on the coarse and moderately coarse textured soils such as the Valent and Vonalf. Lack of organic matter can also lead to poor aggregate stability, creating the potential for wind erosion. Proper wind erosion control practices are most critical in the months of November through May, when 73 percent of the erosive wind energy occurs. Many areas that are planted to annually seeded crops, such as small grains, have been planted to alternate strips of grain/fallow to reduce unsheltered distances and minimize potential wind erosion. Other practices effective in reducing wind erosion include minimum tillage systems, field windbreaks, and planting to permanent vegetation.

Water erosion can be a severe hazard on the gently rolling and steeper soils such as the Iwait and Fairburn. The hazard is greatest on bare surfaces during periods of snowmelt or during intense summer thunderstorms. Practices that help control water erosion include conservation tillage systems, contour farming, and seeding to permanent vegetation.

Given the inherently low fertility and organic matter levels of the soils, erosion control is extremely important. Wind and water erosion typically remove the surface layer of the soil, which normally contains the majority of the soil's organic matter, water holding capacity, and fertility.

Measures that are effective in maintaining soil organic matter and fertility include the use of crop residue, grasses and legumes in the rotation, and the use of animal manure. Long- term cultivation of these soils can result in deficits of both soil nitrogen and soil phosphorus, which may necessitate the application of commercial or organic fertilizer. Information on soils tests and the use of commercial and organic fertilizer is available at the local office of the Natural Resources Conservation Service or Extension Service.

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Detailed Soil Map Units". Suitability ratings of soils and their primary limitations for cropland are shown in the table “Suitability of Soils for Nonirrigated Cropland and Hayland ”. Only those detailed map units that are used for cropland are listed. Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in the table “Nonirrigated Yields by Map Unit Component”. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

Crops other than those shown in the table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. Soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. Criteria used in grouping the soils do not take into account extensive and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, woodland, or engineering purposes.

In the land capability system, as described in “Land Capability Classification” (USDA-SCS, 1961), soils generally are grouped at three levels: capability class, subclass, and unit. Only class and subclass are used in this survey. The capability classes are shown on the “Nonirrigated Yields by Map Unit Component” table.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, **e, w, s,** or **c,** to the class numeral, for example, 2e. The letter **e** shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; **w** shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); **s** shows that the soil is limited mainly because it is shallow, droughty, or stony; and **c**, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by w, s, or c because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

There are no mapping units in this survey area that qualify as prime farmland.

Rangeland

About 87percent of Campbell County is rangeland. More than 90 percent of farm income is derived from livestock, mainly cattle and sheep. Most ranches, which stock cattle, are cow-calf enterprises. Sheep are usually not stocked at equal numbers with cattle on the same ranch, although small sheep herds are kept on many ranches. A few ranches stock buffalo, the largest grazing buffalo on 43,000 acres. The average size of ranches is 5,700 acres with some ranches as large as 45,000 acres. Most ranches are family owned and operated. (Wyoming Ag Statistics Service, 1999)

Precipitation in the county ranges from 10 to 17 inches annually. The southern portion is in the 10-14 inch precipitation zone, while the northern half is in the 15-17 inch precipitation zone. Winter snow pack is usually light and livestock are grazed yearlong with supplemental hay fed as needed.

In areas that have similar climate and topography, differences in the kind and amount of rangeland or forest understory vegetation are closely related to the kind of soil. Effective management is based on the relationship between the soils and vegetation and water.

Soil characteristics vary throughout the survey area. In general, soils in the eastern part of the survey area are shallow to very deep loams, silt loams, clay loams, silty clay loams, fine sandy loams, and clays. They support predominantly short and mid grasses, with coniferous tree species occurring on some sites in the Deer Creek, Duck Creek, and Mitchell Creek Breaks. Soils in the central part of the survey area consist predominantly of moderately deep to very deep fine sandy loams, loams, and clay loams. They support a mixture of short, mid, and a few tall grass species. Soils in the north-central part of the survey area are predominantly shallow to very deep fine sandy loams, loams, and clay loams that commonly contain many rock fragments. They support a mixture of short and mid grasses, with coniferous tree species occurring over the hills and ridges. In the western part of the survey area the soils are shallow to very deep and are predominantly loams and clay loams. Fine sandy loam and clay soils occur in localized areas. These soils support a mixture of short and mid grasses and shrubs.

The “Rangeland Productivity” table shows, for each soil that supports vegetation suitable for grazing, the ecological site and the total annual production of vegetation in favorable, normal, and unfavorable years. An explanation of the column headings in the table follows.

An **ecological site** is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of the site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service or online at http://www.nrcs.usda.gov/technical/efotg/.

Total dry-weight production is the amount of vegetation that can be expected to grow annually in a well managed area that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for **favorable, normal,** and **unfavorable** years. In a **favorable** year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a **normal** year, growing conditions are about average. In an **unfavorable** year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percent of air-dry moisture content.

Range management requires a knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range similarity index and rangeland trend. Range similarity index is determined by comparing the present plant community with the potential natural plant community on a particular rangeland ecological site. The more closely the existing community resembles the potential community, the higher the range similarity index. Rangeland trend is defined as the direction of change in an existing plant community relative to the potential natural plant community. Further information about the range similarity index and rangeland trend is available in chapter 4 of the "National Range and Pasture Handbook" (http://www.glti.nrcs.usda.gov).

The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, control of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, an area with a range similarity index somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Range management practices that are important to maintain productivity are proper grazing use and planned grazing systems that include proper distribution, proper season of use, and deferred grazing. Practices such as watering facilities, fences, and proper salt placement are needed to obtain proper grazing use. Improvements such as brush management, range seeding, and range renovation are dependent on the soil and climate of a given site. The “Suitability of Soils for Rangeland Practices” table shows the suitability of soils and their limitations for stockwater ponds, range renovation, and range seeding.

Forest Productivity and Management

The table referred to in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forest management.

Forest Productivity

In the “Forestland Productivity” table, the potential productivity of merchantable or common trees on a soil is expressed as a site index and as a volume number. The site index is the average height, in feet, that dominant and co-dominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. Only those soils that have potential native plant community that meets the definition of woodland are listed in the table. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet at (www.soils.usda.gov/technical/nfmanual.).

The volume of wood fiber, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forest Management

Interpretative ratings of soils for forest management can be obtained from the local office of the Natural Resources Conservation Service

Recreation

The soils of the survey area are rated in the “Camp Areas, Picnic Areas, and Playgrounds” and “Trails and Golf Fairways” tables according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses.

Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected.

Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected.

Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00). The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered.

Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs.

In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential. The information in the tables can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Hydric Soils

In this section, hydric soils are defined and described. A list of hydric soils in the survey area can be obtained for the local office of the Natural Resources Conservation Service.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 1998) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 1998).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties".

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. The “Dwellings and Small Commercial Buildings” and “Roads and Streets, Shallow Excavations, and Lawns and Landscaping” tables show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping. The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development.

Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected.

Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected.

Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

The “Sewage Disposal” table shows the degree and kind of soil limitations that affect septic tank absorption fields and sewage lagoons. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses.

Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected.

Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected.

Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas. Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter. Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

Agricultural Waste Management

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

Interpretative ratings of soils for agricultural waste management can be obtained from the local office of the Natural Resources Conservation Service

Construction Materials

The “Source of Gravel and Sand” and “Source of Reclamation Material, Roadfill, and Topsoil” tables give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In the “Source of Gravel and Sand” table, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness.

The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness. The soils are rated **good, fair**, or **poor** as potential sources of sand and gravel. A rating of **good** or **fair** means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a **poor** source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

The soils are rated **good, fair,** or **poor** as potential sources of **topsoil, reclamation material**, and **roadfill**. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence.

The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread. The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

The “Ponds and Embankments” table gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses.

Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected.

Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected.

Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction. The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties. Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed.

During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils. The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

The “Engineering Properties” table gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in the “Engineering Properties” table.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

The “Physical Soil Properties” table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are **sand, silt,** and **clay,** ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. The estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. The estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. The estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification. The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (K-sat) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (K-sat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension

(33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil. Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is **low** if the soil has a linear extensibility of less than 3 percent; **moderate** if 3 to 6 percent; **high** if 6 to 9 percent; and **very high** if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. The estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments. Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size. Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.
8. Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

The “Chemical Soil Properties” table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

Soil Features

The “Soil Features” table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A **restrictive layer** is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation.

Depth to top is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as low, moderate, or high, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as low, moderate, or high. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Water Features

The “Water Features” table gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The **months** in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. The table indicates, by month, depth to the top (upper limit) and base (lower limit) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation.

The table indicates surface water depth and the duration and frequency of ponding. Duration is expressed as **very brief** if less than 2 days, **brief** if 2 to 7 days, **long** if 7 to 30 days, and **very long** if more than 30 days. Frequency is expressed as **none, rare, occasional,** and **frequent**. **None** means that ponding is not probable; **rare** that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); **occasional** that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and **frequent** that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding. Duration and frequency are estimated. Duration is expressed as **extremely brief** if 0.1 hour to 4 hours, **very brief** if 4 hours to 2 days, **brief** if 2 to 7 days, long if 7 to 30 days, and **very long** if more than 30 days. Frequency is expressed as **none, very rare, rare, occasional, frequent,** and **very frequent**. **None** means that flooding is not probable; **very rare** that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); **rare** that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); **occasional** that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); **frequent** that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and **very frequent** that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development. Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

References

American Association of State Highway and Transportation Officials (AASHTO). 2000. Standard specifications for transportation materials and methods of sampling and testing. 20th edition, 2 volumes.

American Society for Testing and Materials (ASTM). 2001. Standard classification of soils for engineering purposes. ASTM Standard D 2487-00.

Brekenridge, R.M., Glass, G.B., Root, F.K., and Wendell, W.G. , December, 1974, Campbell County, Wyoming, Geologic Map Atlas and Summary of Land, Water, and Mineral Resources, County Resource Series No. CRS-3, Geological Survey of Wyoming, nine maps, folded.

Cowardin, L. M., V. Carter, F.C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. USDI-FWS. FWS/OSB-79/31.

Energy Information Administration, U.S. Department of Energy, October, 2003, United States Country Analysis Briefs, http://www.eia.doe.gov/emeu/cabs/usa.html#coal.

Environmental Laboratory. 1987. Corps of Engineers Wetlands delineation manual. Tech. Rpt. Y-87-1. US Army Engineers Waterways Experiment Station, Vicksburg, MS.

Federal Register. July 13, 1994. Changes in hydric soils of the United States. Washington, DC

Federal Register. February 24, 1995. Hydric soils of the United States, Washington, DC

Fogg, J.L., Martin, M.W., and Daddow, P.B., 1991, Geohydrology and Potential effects of Coal Mining in 12 Coal-Lease Areas, Powder River Structural Basin, Northeastern Wyoming, U.S. Geological Survey, Water-Resources Investigations Report 87-4102, 49 pages.

Harris, R.E., November, 2003, "Industrial Minerals and Uranium Update," Wyoming Geo-Notes, No. 78, Geological Survey of Wyoming, 47 pages.

Lageson, D. and Spearing, D., 1988, Roadside Geology of Wyoming, Mountain Press Publishing Company, Missoula, Montana, 274 pages.

Lyman, R.M., June, 2003, "Coal Update," Wyoming Geo-Notes, No. 77, Geological Survey of Wyoming, 39 pages.

Lyman, R.M., November, 2003, “Coal Update,” Wyoming Geo-Notes, No. 78, Geological Survey of Wyoming, 47 pages.

National Research Council. 1995. Wetlands: Characteristics and boundaries. National Academy Press. Washington, D.C.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1998. Keys to soil taxonomy. 8th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Tiner, R.W., Jr. 1985. Wetlands of Delaware. USDI-FWS, Newton Corner, MA and Delaware Department of Natural Resources and Environmental Control, Wetlands Section, Dover, DE.

United States Department of Agriculture-Natural Resources Conservation Service. 1998. Field indicators of hydric soils in the United States. Ver. 4.0. Hurt, G.W., P.M. Whited, R.F. Pringle, (eds.). USDA-NRCS, Fort Worth, TX.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. (http://nsscnt.nssc.nrcs.usda.gov/nfm/)

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. (http://www.ftw.nrcs.usda.gov/glti/NRPH.html)

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210.

Wyoming Agricultural Statistics, 1999

Wyoming Oil and Gas Conservation Commission, 2002, Wyoming Oil and Gas Statistics, http://wogcc.state.wy.us.

Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Badland. Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. The steep and very steep broken land at the border of an upland summit that is dissected by ravines.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized=excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual".

Drainage, surface. Runoff, or surface flow of water, from an area.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called normal field capacity, normal moisture capacity, or capillary capacity.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Head out. To form a flower head.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual."

The major horizons of mineral soil are as follows:

O horizon. An organic layer of fresh and decaying plant residue.

A horizon. The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon. The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon. The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon. The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon. Soft, consolidated bedrock beneath the soil.

R layer. Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin. Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border. Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding. Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation. Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle). Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow. Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler. Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation. Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding. Water, released at high points, is allowed to flow onto an area without controlled distribution.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Ksat. Saturated hydraulic conductivity. (See Permeability.)

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance - few, common, and many; size - fine, medium, and coarse; and contrast - faint, distinct, and prominent. The size measurements are of the diameter along the greatest dimension. Fine indicates less than 5 millimeters (about 0.2 inch); medium, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and coarse, more than 15 millimeters (about 0.6 inch).

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables=hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, hardpan, fragipan, claypan, plowpan, and traffic pan.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual". In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Sideslope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slickspot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 3 percent
Gently sloping	1 to 8 percent
Strongly sloping	4 to 16 percent
Moderately steep	10 to 30 percent
Steep	20 to 60 percent
Very steep	More than 60 percent

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of the NA concentration divided by the square root of one-half of the Ca + Mg concentration. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are: platy (laminated), prismatic (vertical axis of aggregates longer than horizontal), columnar (prisms with rounded tops), blocky (angular or subangular), and granular . Structureless soils are either single grained (each grain by itself, as in dune sand) or massive (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine".

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Temperature and Precipitation

(Recorded in the period of 1961-1990 at Gillette, Wyoming.)

	Temperature (Degrees F.)						Precipitation (Inches)				
				2 yrs in 10 will have				2 yrs in 10 will have			
Month	avg daily max	avg daily min	avg	max temp. >than	min temp. <than	avg # of grow deg days*	avg	less than	more than	avg # of days w/.1 or more	avg total snow fall
January	31.6	10.3	20.9	56	-25	3	0.54	0.24	0.79	1	9.3
February	36.8	15.6	26.2	60	-19	10	0.56	0.26	0.82	1	8.8
March	44.7	21.8	33.3	70	-9	48	0.83	0.47	1.14	2	10.9
April	55.6	30.5	43.1	81	9	165	1.86	0.86	2.72	5	9.9
May	65.5	39.8	52.7	88	23	399	2.97	1.33	4.38	6	3.1
June	76.6	48.8	62.7	98	33	677	3.02	1.36	4.45	5	0.1
July	86.2	55.1	70.7	102	41	951	1.68	0.86	2.40	3	0.0
August	84.8	53.3	69.0	100	37	898	1.25	0.39	1.95	3	0.0
September	72.9	43.2	58.1	95	23	546	1.46	0.51	2.24	3	1.2
October	60.6	33.6	47.1	83	11	264	1.24	0.58	1.88	3	4.3
November	44.1	21.8	33.0	71	-9	51	0.69	0.34	0.99	2	8.2
December	33.6	12.5	23.1	61	-25	11	0.63	0.31	0.91	2	10.8
Yearly :											
Average	57.7	32.2	45.0	---	---	---	----	----	----	---	---
Extreme	107	-37	---	103	-30	---	----	----	----	---	---
Total	---	---	---	---	---	4023	16.72	14.03	19.18	36	66.6

Average # of days per year with at least 1 inch of snow on the ground: 76

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minumum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (Threshold : 40.0 deg. F)

Freeze Dates in Spring and Fall

(Recorded in the period 1961-1990 at Gillette, Wyoming.)

Probability	Temperature		
	24F or lower	28F or lower	32F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 9	May 23	June 1
2 year in 10 later than--	May 3	May 17	May 27
5 year in 10 later than--	April 22	May 5	May 19
First freezing temperature in fall:			
1 yr in 10 earlier than--	September 21	September 12	September 3
2 yr in 10 earlier than--	September 27	September 18	September 9
5 yr in 10 earlier than--	October 7	September 30	September 20

Growing Season

(Recorded in the period 1961-1990 at Gillette, Wyoming.)

Probability	Daily Minimum Temperature		
	# days > 24F	# days > 28F	# days > 32F
9 years in 10	144	122	104
8 years in 10	152	131	110
5 years in 10	167	147	124
2 years in 10	183	163	137
1 year in 10	191	172	143

Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
103	Arwite fine sandy loam, 0 to 6 percent slopes	12,295	1.0
105	Arwite-Elwop fine sandy loams, 0 to 6 percent slopes	37,224	2.9
106	Arwite-Elwop fine sandy loams, 6 to 15 percent slopes	11,495	0.9
107	Arwite-Vonalf fine sandy loams, 0 to 6 percent slopes	10,057	0.8
122	Cushman-Cambria loams, 6 to 15 percent slopes	186	*
131	Deekay loam, 0 to 6 percent slopes	9,188	0.7
132	Deekay-Moorhead loams, 0 to 6 percent slopes	12,333	1.0
133	Deekay-Moorhead loams, 6 to 15 percent slopes	1,026	*
134	Deekay-Oldwolf loams, 0 to 6 percent slopes	42,380	3.3
135	Deekay-Oldwolf loams, 6 to 15 percent slopes	13,854	1.1
136	Deekay-Ziggy loams, 0 to 6 percent slopes	7,745	0.6
137	Echeta clay loam, 0 to 6 percent slopes	99	*
138	Echeta-Cromack clay loams, 6 to 15 percent slopes	3,548	0.3
144	Forkwood loam, 0 to 6 percent slopes	1,100	*
146	Forkwood-Cushman loams, 0 to 6 percent slopes	2,190	0.2
147	Forkwood-Cushman loams, 6 to 15 percent slopes	4,512	0.4
148	Forkwood-Ulm loams, 0 to 6 percent slopes	746	*
149	Forkwood-Ulm loams, 6 to 15 percent slopes	110	*
151	Haverdad loam, 0 to 3 percent slopes	42	*
155	Heldt-Bidman complex, saline, 0 to 3 percent slopes	248	*
162	Lismas-Mittenbutte, cool-Sabatka complex, 6 to 40 percent slopes	61	*
164	Lismas-Sabatka-Badland complex, 3 to 45 percent slopes	8,508	0.7
166	Jaywest loam, 0 to 6 percent slopes	11,321	0.9
167	Jaywest-Moorhead loams, 0 to 6 percent slopes	15,797	1.2
168	Jaywest-Spottedhorse loams, 0 to 6 percent slopes	20,071	1.6
170	Keeline-Tullock loamy sands, 6 to 30 percent slopes	316	*
174	Brislawn-Rockybutte-Ironbutte complex, 0 to 10 percent slopes	10,388	0.8
176	Leiter-Cromack clay loams, 3 to 15 percent slopes	4,062	0.3
181	Moorhead clay loam, 0 to 6 percent slopes	4,469	0.4
182	Moorhead loam, 0 to 6 percent slopes	1,468	0.1
183	Moorhead-Leiter clay loams, 0 to 6 percent slopes	14,786	1.2
184	Moorhead-Leiter clay loams, 6 to 15 percent slopes	8,260	0.6
185	Moskee fine sandy loam, 0 to 6 percent slopes	3,529	0.3
187	Nuncho loam, 0 to 6 percent slopes	67	*
191	Pits-Dumps complex	7,489	0.6
192	Platmak loam, 0 to 6 percent slopes	1,857	0.1
198	Recluse loam, 0 to 6 percent slopes	1,029	*
203	Rockypoint-Iwait association, 0 to 6 percent slopes	1,230	*
204	Samday-Samday,cool-Shingle clay loams, 6 to 40 percent slopes	13,096	1.0
206	Samday-Shingle-Badland complex, 10 to 45 percent slopes	20,044	1.6
207	Cromack-Fairburn-Ucross complex, 3 to 20 percent slopes	82	*
210	Shingle-Taluce complex, 3 to 30 percent slopes	119	*
215	Theedle-Kishona loams, 6 to 20 percent slopes	1,347	0.1
216	Theedle-Kishona-Shingle loams, 3 to 30 percent slopes	25,835	2.0
217	Theedle-Shingle loams, 3 to 30 percent slopes	6,554	0.5
219	Torriarents-Torriorthents complex, reclaimed	1,267	*
220	Pitchdraw-Ashollow-Niobrara complex, 3 to 30 percent slopes	182	*
221	Turnercrest-Keeline-Taluce fine sandy loams, 6 to 30 percent slopes	1,429	0.1
223	Ucross loam, 1 to 9 percent slopes	10	*
224	Ucross-Iwait loams, 0 to 6 percent slopes	11,726	0.9
225	Ucross-Iwait-Fairburn loams, 3 to 30 percent slopes	107,257	8.4
228	Ulm-Renohill clay loams, 0 to 6 percent slopes	1,591	0.1
229	Ulm-Renohill clay loams, 6 to 15 percent slopes	3,741	0.3
233	Ustic Torriorthents, gullied	1,103	*
234	Ustic Torriorthents-Badland complex, 10 to 100 percent slopes	4	*
236	Vonalee-Terro fine sandy loams, 2 to 10 percent slopes	278	*
238	Vonalf-Xema fine sandy loams, 3 to 10 percent slopes	403	*
239	Ironbutte-Fairburn-Mittenbutte complex, 6 to 40 percent slopes	35,508	2.8
241	Ironbutte-Ironbutte, thin solum channery loams, 6 to 40 percent slopes	5,556	0.4
244	Muleherder-Ironbutte channery loams, 3 to 40 percent slopes	6,375	0.5
248	Ziggy-Iwait loams, 0 to 6 percent slopes	5,565	0.4
249	Ziggy-Iwait loams, 6 to 15 percent slopes	2,348	0.2

See footnote at end of table.

Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
250	Ziggy-Ucross-Oldwolf loams, 3 to 15 percent slopes	1,365	0.1
251	Water	1,145	*
252	Absted-Slickspots complex, 0 to 6 percent slopes	52	*
253	Absted-Arvada-Slickspots complex, 0 to 6 percent slopes	2,633	0.2
254	Badland-Lismas complex, 15 to 75 percent slopes	23,472	1.8
255	Bidman-Parmleed loams, 0 to 6 percent slopes	1,828	0.1
256	Bidman-Ulm complex, 0 to 6 percent slopes	1,524	0.1
257	Bonfri, deep-Bonfri fine sandy loams, 0 to 6 percent slopes	1,473	0.1
258	Bonfri-Kirby complex, 0 to 10 percent slopes	732	*
259	Bonfri-Twilight-Blacksheep fine sandy loams, wooded, 3 to 30 percent slopes	1,329	0.1
260	Cabbart-Volborg-Badland complex, wooded, 3 to 60 percent slopes	2,763	0.2
261	Cabbart-Yawdim-Badland complex, 6 to 45 percent slopes	3,248	0.3
262	Cambria-Kishona-Zigweid loams, 0 to 6 percent slopes	3,644	0.3
263	Cedar Butte-Slickspots complex, 0 to 6 percent slopes	4,063	0.3
264	Clarkelen-Draknab fine sandy loams, 0 to 3 percent slopes	786	*
265	Clarkelen-Draknab-Boruff complex, 0 to 6 percent slopes	771	*
266	Coaliams fine sandy loam, moderately saline, 0 to 3 percent slopes	1,097	*
267	Cromack-Samsil clay loams, 3 to 15 percent slopes	10,151	0.8
268	Decolney-Hiland fine sandy loams, 0 to 6 percent slopes	1,105	*
269	Decolney-Hiland fine sandy loams, 6 to 15 percent slopes	244	*
270	Deekay-Deekay, stratified substratum loams, 0 to 6 percent slopes	6,685	0.5
271	Delpoint-Cabbart loams, 6 to 30 percent slopes	2,235	0.2
272	Delpoint-Yamacall-Cabbart loams, 3 to 30 percent slopes	4,080	0.3
273	Delpoint-Yamacall-Cabbart loams, wooded, 3 to 30 percent slopes	8,952	0.7
274	Denied access	84,060	6.6
275	Echeta-Moorhead clay loams, 0 to 6 percent slopes	8,279	0.6
276	Elwop-Mittenbutte-Rock outcrop complex, wooded, 3 to 60 percent slopes	3,187	0.2
277	Fairburn-Mittenbutte-Badland complex, 3 to 60 percent slopes	15,340	1.2
278	Fairburn-Samsil-Badland complex, 10 to 45 percent slopes	62,873	4.9
279	Fairburn-Samsil-Badland complex, wooded, 6 to 50 percent slopes	11,508	0.9
280	Felix clay, 0 to 2 percent slopes	1,918	0.2
281	Foreleft loam, 0 to 6 percent slopes	721	*
282	Foreleft-Bonfri loams, 3 to 15 percent slopes	7,065	0.6
283	Gateson-Xema-Mittenbutte fine sandy loams, wooded, 3 to 30 percent slopes	7,826	0.6
284	Haverdad clay loam, 0 to 3 percent slopes	1,131	*
285	Haverdad-Boruff complex, 0 to 3 percent slopes	6,282	0.5
286	Havre-Bigsandy loams, 0 to 3 percent slopes	439	*
287	Hiland-Bowbac association, 3 to 15 percent slopes	118	*
288	Hiland-Bowbac fine sandy loams, 0 to 6 percent slopes	894	*
289	Hiland-Bowbac fine sandy loams, 6 to 15 percent slopes	1,308	0.1
290	Hiland-Decolney complex, 3 to 15 percent slopes	161	*
291	Ironbutte-Fairburn-Mittenbutte complex, wooded, 3 to 60 percent slopes	70,074	5.5
292	Jaywest-Jaywest, stratified substratum loams, 0 to 6 percent slopes	4,165	0.3
293	Jaywest, saline substratum-Cedar Butte-Slickspots complex, 0 to 6 percent slopes	8,077	0.6
294	Kirby-Cabbart-Blacksheep complex, wooded, 6 to 45 percent slopes	22,219	1.7
295	Lismas-Sabatka-Xema complex, 3 to 15 percent slopes	33,706	2.6
296	Megonot-Yawdim clay loams, 3 to 15 percent slopes	1,578	0.1
297	Muleherder-Ironbutte channery loams, wooded, 10 to 60 percent slopes	8,762	0.7
298	Nuncho clay loam, 0 to 6 percent slopes	2,543	0.2
299	Oldwolf-Fairburn loams, 3 to 15 percent slopes	12,909	1.0
300	Oshoto-Klinedraw silt loams, 0 to 6 percent slopes	11,699	0.9
301	Oshoto-Klinedraw silt loams, 6 to 15 percent slopes	9,937	0.8
302	Oshoto-Moorhead complex, 0 to 6 percent slopes	1,365	0.1
303	Oshoto-Ziggy silt loams, 0 to 6 percent slopes	6,762	0.5
304	Parmleed-Bidman association, 3 to 15 percent slopes	223	*
305	Pinehill clay loam, 0 to 6 percent slopes	632	*
306	Pinehill-Pylon clay loams, 3 to 15 percent slopes	2,796	0.2
307	Pinehill complex, 0 to 6 percent slopes	1,019	*
308	Pinehill-Pylon loams, 3 to 15 percent slopes	2,136	0.2
309	Pitchdraw-Ashollow-Mittenbutte fine sandy loams, 3 to 20 percent slopes	1,954	0.2

See footnote at end of table.

Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
310	Rockypoint loam, 0 to 3 percent slopes	1,143	*
311	Rockypoint-Boruff complex, 0 to 3 percent slopes	16,590	1.3
312	Rockypoint-Sodawells complex, 0 to 3 percent slopes	12,393	1.0
313	Savageton-Samday clay loams, 3 to 15 percent slopes	7,504	0.6
314	Savageton-Silhouette clay loams, 6 to 15 percent slopes	1,460	0.1
315	Shingle-Taluce-Badland complex, 6 to 45 percent slopes	306	*
316	Shingle-Taluce-Badland complex, wooded, 6 to 45 percent slopes	3,727	0.3
317	Silhouette-Ulm clay loams, 0 to 6 percent slopes	4,150	0.3
318	Sodawells-Pathfinder-Boruff complex, 0 to 6 percent slopes	8,973	0.7
319	Spottedhorse-Lieter complex, 0 to 6 percent slopes	1,986	0.2
320	Stetter clay, 0 to 3 percent slopes	235	*
321	Swanboy-Cedar Butte-Slickspots complex, 0 to 6 percent slopes	2,465	0.2
322	Toby-Twilight-Blacksheep fine sandy loams, 3 to 30 percent slopes	583	*
323	Ucross-Fairburn loams, 3 to 15 percent slopes	19,811	1.6
324	Ucross-Fairburn loams, 15 to 45 percent slopes	47,878	3.8
325	Ucross-Fairburn loams, wooded, 10 to 50 percent slopes	14,346	1.1
326	Ucross-Iwait-Fairburn loams, wooded, 3 to 30 percent slopes	13,441	1.1
327	Ulm-Bidman complex, 0 to 6 percent slopes	11,177	0.9
328	Ulm clay loam, 0 to 6 percent slopes	1,330	0.1
329	Ulm clay loam, 3 to 6 percent slopes	122	*
330	Ulm clay loam, 6 to 10 percent slopes	788	*
331	Valent-Duneland complex, 3 to 15 percent slopes	480	*
332	Vanstel-Pinehill complex, 0 to 6 percent slopes	332	*
333	Vonalee-Terro-Taluce fine sandy loams, 3 to 30 percent slopes	1,869	0.1
334	Vonalf-Xema-Mittenbutte fine sandy loams, 3 to 30 percent slopes	55,756	4.4
335	Wibaux-Shingle-Taluce complex, 6 to 40 percent slopes	3,339	0.3
336	Wibaux-Shingle-Taluce complex, wooded, 6 to 40 percent slopes	2,720	0.2
337	Winler-Twotop clays, 0 to 6 percent slopes	1,637	0.1
338	Zigweid-Cambria loams, 0 to 6 percent slopes	775	*
339	Zigweid-Kishona-Cambria complex, 6 to 15 percent slopes	1,319	0.1
	Total	1,276,184	100.0

* Less than 0.1 percent.

Taxonomic Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Absted	Fine, smectitic, mesic Haplic Ustic Natrargids
Arvada	Fine, smectitic, mesic Vertic Natrargids
Arwite	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Ashollow	Coarse-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents
Bidman	Fine, smectitic, mesic Ustic Paleargids
Bigsandy	Fine-loamy, mixed, superactive, calcareous, frigid Typic Fluvaquents
Blacksheep	Loamy, mixed, superactive, calcareous, frigid, shallow Aridic Ustorthents
Bonfri	Fine-loamy, mixed, superactive, frigid Aridic Haplustalfs
Boruff	Fine, smectitic, calcareous, mesic Vertic Fluvaquents
Bowbac	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Brislawn	Fine, smectitic, mesic Aridic Paleustalfs
Cabbart	Loamy, mixed, superactive, calcareous, frigid, shallow Aridic Ustorthents
Cambria	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Cedar Butte	Fine, smectitic, mesic Torrertic Natrustalfs
Clarkelen	Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torrifluvents
Coaliams	Fine-loamy, mixed, superactive, mesic Torrifluventic Haplustolls
Cromack	Fine, smectitic, mesic Aridic Haplustepts
Cushman	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Decolney	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Deekay	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Delpoint	Fine-loamy, mixed, superactive, frigid Aridic Haplustepts
Draknab	Sandy, mixed, mesic Ustic Torrifluvents
Echeta	Fine, smectitic, mesic Torrertic Haplustepts
Elwop	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Fairburn	Loamy, mixed, superactive, calcareous, mesic, shallow Aridic Ustorthents
Felix	Very-fine, smectitic, mesic Aridic Epiaquerts
Foreleft	Fine-loamy, mixed, superactive, frigid Aridic Haplustalfs
Forkwood	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Gateson	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Haverdad	Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torrifluvents
Havre	Fine-loamy, mixed, superactive, calcareous, frigid Aridic Ustifluvents
Heldt	Fine, smectitic, mesic Ustertic Haplocambids
Hiland	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Hilight	Clayey, smectitic, nonacid, mesic, shallow Ustic Torriorthents
Ironbutte	Loamy-skeletal over fragmental, mixed, superactive, nonacid, mesic Aridic Ustorthents
Iwait	Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents
Jaywest	Fine, smectitic, mesic Aridic Paleustalfs
Julesburg	Coarse-loamy, mixed, superactive, mesic Aridic Argiustolls
Keeline	Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Keyner	Fine-loamy, mixed, superactive, mesic Haplic Ustic Natrargids
Kirby	Loamy-skeletal over fragmental, mixed, superactive, calcareous, frigid Aridic Ustorthents
Kishona	Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Klinedraw	Fine-silty, mixed, superactive, mesic Aridic Haplustalfs
Leiter	Fine, smectitic, mesic Aridic Haplustalfs
Lismas	Clayey, smectitic, nonacid, mesic, shallow Aridic Ustorthents
Megonot	Fine, smectitic, frigid Torrertic Haplustepts
Mittenbutte	Loamy, mixed, superactive, calcareous, mesic, shallow Aridic Ustorthents
*Mittenbutte	Loamy, mixed, superactive, nonacid, mesic, shallow Aridic Ustorthents
Moorhead	Fine, smectitic, mesic Torrertic Haplustalfs
Moskee	Fine-loamy, mixed, superactive, mesic Aridic Argiustolls
Muleherder	Loamy-skeletal over fragmental, mixed, superactive, mesic Aridic Haplustepts
Niobrara	Mixed, mesic, shallow Aridic Ustipsamments
Nuncho	Fine, smectitic, mesic Aridic Argiustolls
Oldwolf	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Orpha	Mixed, mesic Ustic Torripsamments
Oshoto	Fine-silty, mixed, superactive, mesic Aridic Haplustalfs
Parmleed	Fine, smectitic, mesic Ustic Paleargids
Pathfinder	Sandy, mixed, mesic Aridic Ustifluvents
Pinehill	Fine, smectitic, frigid Aridic Haplustalfs

Taxonomic Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Pitchdraw	Coarse-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents
Platmak	Fine, smectitic, mesic Aridic Paleustolls
Pylon	Fine, smectitic, frigid Torrertic Haplustalfs
Recluse	Fine-loamy, mixed, superactive, mesic Aridic Argiustolls
Renohill	Fine, smectitic, mesic Ustic Haplargids
Rockybutte	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Rockypoint	Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustifluvents
Sabatka	Fine, smectitic, mesic Aridic Haplustepts
Samday	Clayey, smectitic, calcareous, mesic, shallow Ustic Torriorthents
Samsil	Clayey, smectitic, calcareous, mesic, shallow Aridic Ustorthents
Savageton	Fine, smectitic, mesic Ustic Haplocambids
Shingle	Loamy, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents
Silhouette	Fine, smectitic, mesic Ustic Haplocambids
Sodawells	Coarse-loamy, mixed, superactive, calcareous, mesic Aridic Ustifluvents
Spottedhorse	Fine, smectitic, mesic Aridic Paleustalfs
Stetter	Fine, smectitic, nonacid, mesic Torrertic Ustifluvents
Swanboy	Very-fine, smectitic, mesic Aridic Haplusterts
Taluce	Loamy, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents
Terro	Coarse-loamy, mixed, superactive, mesic Ustic Haplargids
Theedle	Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Toby	Coarse-loamy, mixed, superactive, frigid Aridic Haplustepts
Torriarents	Torriarents
Torriorthents	Torriorthents
Tullock	Mixed, mesic Ustic Torripsamments
Turnercrest	Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Twilight	Coarse-loamy, mixed, superactive, frigid Haplocalcidic Haplustepts
Twotop	Very-fine, smectitic, mesic Aridic Haplusterts
Ucross	Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents
Ulm	Fine, smectitic, mesic Ustic Haplargids
Ustic Torriorthents	Ustic Torriorthents
*Valent	Mixed, mesic Aridic Ustipsamments
Vanstel	Fine-silty, mixed, superactive, frigid Aridic Haplustalfs
Volborg	Clayey, smectitic, acid, frigid, shallow Aridic Ustorthents
Vonalee	Coarse-loamy, mixed, superactive, mesic Ustic Haplargids
Vonalf	Coarse-loamy, mixed, superactive, mesic Aridic Haplustalfs
Wags	Fine, smectitic, nonacid, mesic Ustic Torriorthents
Wibaux	Loamy-skeletal over fragmental, mixed, superactive, nonacid, mesic Ustic Torriorthents
Winler	Very-fine, smectitic, mesic Aridic Leptic Haplusterts
Worf	Loamy, mixed, superactive, mesic, shallow Ustic Haplargids
Worfka	Clayey, smectitic, mesic, shallow Ustic Haplargids
Wyarno	Fine, smectitic, mesic Ustic Haplargids
Wyotite	Fine-silty, mixed, superactive, mesic Ustic Haplargids
Xema	Coarse-loamy, mixed, superactive, mesic Aridic Haplustalfs
Yamacall	Fine-loamy, mixed, superactive, frigid Aridic Haplustepts
Yawdim	Clayey, smectitic, calcareous, frigid, shallow Aridic Ustorthents
Ziggy	Fine-loamy, mixed, superactive, mesic Aridic Haplustepts
Zigweid	Fine-loamy, mixed, superactive, mesic Ustic Haplocambids

Suitability of Soils for Nonirrigated Cropland and Hayland

(Only those detailed map units that are used for cropland and hayland are listed in this table.)

Map symbol and and soil name	Nonirrigated cropland	Nonirrigated hayland
103:		
Arwite	Moderately suited Wind erosion	Well suited
105:		
Arwite	Moderately suited Wind erosion	Well suited
Elwop	Moderately suited Wind erosion Droughty	Moderately suited Droughty
107:		
Arwite	Moderately suited Wind erosion	Well suited
Vonalf	Moderately suited Wind erosion Droughty	Moderately suited Droughty
131:		
Deekay	Well suited	Well suited
132:		
Deekay	Well suited	Well suited
Moorhead	Well suited	Well suited
134:		
Deekay	Well suited	Well suited
Oldwolf	Moderately suited Droughty	Moderately suited
136:		
Deekay	Well suited	Well suited
Ziggy	Well suited	Well suited
137:		
Echeta	Well suited	Well suited
144:		
Forkwood	Moderately suited Low precipitation	Moderately suited Low precipitation
146:		
Forkwood	Moderately suited Low precipitation	Moderately suited Low precipitation
Cushman	Moderately suited Droughty Low precipitation	Moderately suited Droughty Low precipitation
148:		
Forkwood	Moderately suited Low precipitation	Moderately suited Low precipitation
Ulm	Moderately suited Low precipitation	Moderately suited Low precipitation

Suitability of Soils for Nonirrigated Cropland and Hayland--Continued

Map symbol and and soil name	Nonirrigated cropland	Nonirrigated hayland
151:		
Haverdad	Not rated	Well suited
166:		
Jaywest	Well suited	Well suited
167:		
Jaywest	Well suited	Well suited
Moorhead	Well suited	Well suited
168:		
Jaywest	Well suited	Well suited
Spottedhorse	Moderately suited Droughty	Moderately suited Droughty
176:		
Leiter	Not rated	Moderately suited Droughty
Cromack	Not rated	Moderately suited Droughty
181:		
Moorhead	Well suited	Well suited
182:		
Moorhead	Well suited	Well suited
183:		
Moorhead	Moderately well suited Slope	Well suited
Leiter	Moderately suited Water erosion	Moderately suited Droughty
185:		
Moskee	Moderately suited Wind erosion	Well suited
187:		
Nuncho	Well suited	Well suited
192:		
Platmak	Well suited	Well suited
198:		
Recluse	Well suited	Well suited
203:		
Rockypoint	Not rated	Poorly suited Salinity
Iwait	Not rated	Well suited
221:		
Turnercrest	Not rated	Poorly suited Slope
Keeline	Not rated	Moderately suited Low precipitation

Suitability of Soils for Nonirrigated Cropland and Hayland--Continued

Map symbol and and soil name	Nonirrigated cropland	Nonirrigated hayland
221:(cont.)		
Taluce	Not rated	Poorly suited Depth to bedrock Slope
223:		
Ucross	Not rated	Moderately suited Droughty
224:		
Ucross	Not rated	Moderately suited Droughty
Iwait	Not rated	Well suited
228:		
Ulm	Moderately suited Low precipitation	Moderately suited Low precipitation
Renohill	Moderately suited Droughty Low precipitation	Moderately suited Droughty Low precipitation
248:		
Ziggy	Well suited	Well suited
Iwait	Well suited	Well suited
255:		
Bidman	Moderately suited Low precipitation	Moderately suited Low precipitation
Parmleed	Moderately suited Droughty Low precipitation	Moderately suited Droughty Low precipitation
256:		
Bidman	Moderately suited Low precipitation	Not rated
Ulm	Moderately suited Low precipitation	Moderately suited Low precipitation
257:		
Bonfri, deep	Moderately suited Wind erosion	Well suited
Bonfri	Moderately suited Wind erosion Droughty	Moderately suited Droughty
262:		
Cambria	Not rated	Moderately suited Low precipitation
Kishona	Not rated	Moderately suited Low precipitation
Zigweid	Not rated	Moderately suited Low precipitation

Suitability of Soils for Nonirrigated Cropland and Hayland--Continued

Map symbol and and soil name	Nonirrigated cropland	Nonirrigated hayland
264:		
Clarkelen	Not rated	Moderately suited Droughty Low precipitation
Draknab	Not rated	Poorly suited Droughty
265:		
Clarkelen	Not rated	Moderately suited Droughty Low precipitation
Draknab	Not rated	Poorly suited Droughty
Boruff	Not rated	Poorly suited Salinity
266:		
Coaliams, moderately saline	Not rated	Poorly suited Salinity
267:		
Cromack	Poorly suited Slope	Moderately suited Droughty
Samsil	Poorly suited Slope Depth to bedrock	Poorly suited Depth to bedrock
268:		
Decolney	Moderately suited Wind erosion Low precipitation	Moderately suited Low precipitation
Hiland	Moderately suited Wind erosion Low precipitation	Moderately suited Low precipitation
270:		
Deekay	Well suited	Well suited
Deekay, stratified substratum	Well suited	Well suited
275:		
Echeta	Well suited	Well suited
Moorhead	Well suited	Well suited
281:		
Foreleft	Well suited	Well suited
282:		
Foreleft	Moderately suited Water erosion Slope	Well suited
Bonfri	Moderately suited Droughty Water erosion Slope	Moderately suited Droughty

Suitability of Soils for Nonirrigated Cropland and Hayland--Continued

Map symbol and and soil name	Nonirrigated cropland	Nonirrigated hayland
284:		
Haverdad	Not rated	Moderately suited Salinity
285:		
Haverdad	Not rated	Poorly suited Salinity
Boruff	Not rated	Poorly suited Salinity Depth to saturated zone
287:		
Hiland	Moderately suited Wind erosion Slope Low precipitation	Not rated
Bowbac	Poorly suited Water erosion Slope	Not rated
288:		
Hiland	Moderately suited Wind erosion Low precipitation	Moderately suited Low precipitation
Bowbac	Moderately suited Wind erosion Droughty Low precipitation	Moderately suited Low precipitation Depth to bedrock
290:		
Hiland	Poorly suited Water erosion Slope	Not rated
Decolney	Poorly suited Wind erosion Slope Low precipitation	Not rated
292:		
Jaywest	Well suited	Well suited
Jaywest, stratified substratum	Well suited	Well suited
296:		
Megonot	Poorly suited Slope	Moderately suited Droughty
Yawdim	Poorly suited Slope Depth to bedrock	Poorly suited Depth to bedrock
298:		
Nuncho	Well suited	Well suited

Suitability of Soils for Nonirrigated Cropland and Hayland--Continued

Map symbol and and soil name	Nonirrigated cropland	Nonirrigated hayland
300:		
Oshoto	Well suited	Well suited
Klinedraw	Not rated	Moderately suited Droughty
302:		
Oshoto	Well suited	Well suited
Moorhead	Well suited	Well suited
303:		
Oshoto	Well suited	Well suited
Ziggy	Well suited	Well suited
304:		
Parmleed	Poorly suited Slope	Moderately suited Droughty
Bidman	Moderately suited Wind erosion Low precipitation	Moderately suited Low precipitation
305:		
Pinehill	Well suited	Well suited
306:		
Pinehill	Moderately suited Water erosion Slope	Well suited
Pylon	Poorly suited Water erosion Slope	Moderately suited Droughty
307:		
Pinehill, loam	Well suited	Well suited
Pinehill, clay loam	Well suited	Well suited
308:		
Pinehill	Moderately suited Water erosion Slope	Well suited
Pylon	Poorly suited Slope Water erosion	Moderately suited Droughty
310:		
Rockypoint	Not rated	Poorly suited Salinity
311:		
Rockypoint	Not rated	Poorly suited Salinity
Boruff	Not rated	Poorly suited Salinity Depth to saturated zone

Suitability of Soils for Nonirrigated Cropland and Hayland--Continued

Map symbol and and soil name	Nonirrigated cropland	Nonirrigated hayland
312:		
Rockypoint	Not rated	Poorly suited Salinity
Sodawells	Not rated	Moderately suited Droughty
313:		
Savageton	Moderately suited Water erosion Droughty Low precipitation	Moderately suited Low precipitation Droughty
Samday	Poorly suited Depth to bedrock	Poorly suited Depth to bedrock
318:		
Sodawells	Not rated	Moderately suited Droughty
Pathfinder	Not rated	Poorly suited Droughty
Boruff	Not rated	Poorly suited Salinity Depth to saturated zone
319:		
Spottedhorse	Moderately suited Droughty	Moderately suited Droughty
Leiter	Moderately suited Droughty	Moderately suited Droughty
323:		
Ucross	Poorly suited Slope	Moderately suited Droughty
Fairburn	Poorly suited Depth to bedrock Slope	Poorly suited Depth to bedrock
327:		
Ulm	Moderately suited Low precipitation	Moderately suited Low precipitation
Bidman	Moderately suited Low precipitation	Moderately suited Low precipitation
328:		
Ulm	Moderately suited Low precipitation	Moderately suited Low precipitation
332:		
Vanstel	Well suited	Well suited
Pinehill	Well suited	Well suited
333:		
Vonalee	Not rated	Moderately suited Droughty Low precipitation

Suitability of Soils for Nonirrigated Cropland and Hayland--Continued

Map symbol and and soil name	Nonirrigated cropland	Nonirrigated hayland
333:(cont.)		
Terro	Not rated	Poorly suited Slope
Taluce	Not rated	Poorly suited Slope Depth to bedrock
334:		
Vonalf	Not rated	Moderately suited Droughty
Xema	Not rated	Poorly suited Slope
Mittenbutte	Not rated	Poorly suited Slope Depth to bedrock
337:		
Winler	Moderately suited Salinity	Moderately suited Salinity
Twotop	Moderately suited Salinity	Moderately suited Salinity
338:		
Zigweid	Moderately suited Low precipitation	Moderately suited Low precipitation
Cambria	Moderately suited Low precipitation	Moderately suited Low precipitation
339:		
Zigweid	Poorly suited Water erosion Slope	Moderately suited Low precipitation
Kishona	Poorly suited Water erosion Slope	Moderately suited Low precipitation
Cambria	Poorly suited Water erosion Slope	Moderately suited Low precipitation

Nonirrigated Yields by Map Unit Component

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Map symbol and soil name	Land capability	Barley	Grass hay	Oats	Pasture	Winter wheat
		Bu	*Tons*	*Bu*	*AUM*	*Bu*
103:						
Arwite	3e	35.00	1.10	40.00	0.80	35.00
105:						
Arwite	3e	35.00	1.10	40.00	0.80	35.00
Elwop	4e	35.00	1.10	40.00	0.80	35.00
106:						
Arwite	4e	---	---	---	---	---
Elwop	4e	---	---	---	---	---
107:						
Arwite	3e	35.00	1.10	40.00	0.80	35.00
Vonalf	3e	32.00	1.10	32.00	0.80	37.00
122:						
Cushman	4e	---	---	---	---	---
Cambria	4e	---	---	---	---	---
131:						
Deekay	3e	35.00	1.10	40.00	0.80	35.00
132:						
Deekay	3e	35.00	1.10	40.00	0.80	35.00
Moorhead	3e	35.00	1.10	40.00	0.80	35.00
133:						
Deekay	4e	---	---	---	---	---
Moorhead	4e	---	---	---	---	---
134:						
Deekay	3e	35.00	1.10	40.00	0.80	35.00
Oldwolf	4e	35.00	1.10	40.00	0.80	35.00
135:						
Deekay	4e	---	---	---	---	---
Oldwolf	4e	---	---	---	---	---
136:						
Deekay	3e	---	1.10	---	0.80	---
Ziggy	4e	---	1.10	---	0.80	---
137:						
Echeta	3e	---	1.10	---	0.80	---
138:						
Echeta	4e	---	---	---	---	---
Cromack	4e	---	---	---	---	---

Nonirrigated Yields by Map Unit Component--Continued

Map symbol and soil name	Land capability	Barley	Grass hay	Oats	Pasture	Winter wheat
		Bu	*Tons*	*Bu*	*AUM*	*Bu*
144:						
Forkwood	3e	32.00	1.00	37.00	0.70	32.00
146:						
Forkwood	4e	---	1.00	---	0.80	---
Cushman	4e	---	1.00	---	0.80	---
147:						
Forkwood	4e	---	---	---	---	---
Cushman	4e	---	---	---	---	---
148:						
Forkwood	3e	32.00	1.00	37.00	0.80	32.00
Ulm	3e	32.00	1.00	37.00	0.70	32.00
149:						
Forkwood	4e	---	---	---	---	---
Ulm	4e	---	---	---	---	---
151:						
Haverdad	4e	---	1.10	---	0.90	---
155:						
Heldt, saline	4s	---	---	---	---	---
Bidman, saline	4s	---	---	---	---	---
162:						
Lismas	7e	---	---	---	---	---
Mittenbutte, cool	7e	---	---	---	---	---
Sabatka	6e	---	---	---	---	---
164:						
Lismas	7e	---	---	---	---	---
Sabatka	6e	---	---	---	---	---
Badland	8	---	---	---	---	---
166:						
Jaywest	3e	35.00	1.30	40.00	0.80	35.00
167:						
Jaywest	3e	35.00	1.10	40.00	0.80	35.00
Moorhead	3e	35.00	1.10	40.00	0.80	35.00
168:						
Jaywest	3e	35.00	1.10	40.00	0.80	35.00
Spottedhorse	4e	35.00	1.10	40.00	0.80	35.00
170:						
Keeline	4e	---	---	---	---	---
Tullock	6e	---	---	---	---	---

Nonirrigated Yields by Map Unit Component--Continued

Map symbol and soil name	Land capability	Barley	Grass hay	Oats	Pasture	Winter wheat
		Bu	*Tons*	*Bu*	*AUM*	*Bu*
174:						
Brislawn	4e	---	---	---	---	---
Rockybutte	4e	---	---	---	---	---
Ironbutte	7s	---	---	---	---	---
176:						
Leiter	4e	---	1.10	---	0.80	---
Cromack	4e	---	1.10	---	0.80	---
181:						
Moorhead	3e	35.00	1.10	40.00	0.80	35.00
182:						
Moorhead	3e	35.00	1.10	40.00	0.80	35.00
183:						
Moorhead	3e	35.00	1.10	40.00	0.80	35.00
Leiter	4e	35.00	1.10	40.00	0.80	35.00
184:						
Moorhead	4e	---	---	---	---	---
Leiter	4e	---	---	---	---	---
185:						
Moskee	3e	38.00	1.20	40.00	0.80	38.00
187:						
Nuncho	3e	38.00	1.20	40.00	0.80	38.00
191:						
Pits	8	---	---	---	---	---
Dumps	8	---	---	---	---	---
192:						
Platmak	3e	38.00	1.20	42.00	0.80	38.00
198:						
Recluse	3e	38.00	1.20	40.00	0.80	38.00
203:						
Rockypoint	4e	---	1.10	---	0.80	---
Iwait	4e	---	1.10	---	0.80	---
204:						
Samday	7e	---	---	---	---	---
Samday, cool	7e	---	---	---	---	---
Shingle	7e	---	---	---	---	---
206:						
Samday	7e	---	---	---	---	---
Shingle	7e	---	---	---	---	---
Badland	8	---	---	---	---	---

NonIrrigated Yields by Map Unit Component--Continued

Map symbol and soil name	Land capability	Barley	Grass hay	Oats	Pasture	Winter wheat
		Bu	*Tons*	*Bu*	*AUM*	*Bu*
207:						
Cromack	4e	---	---	---	---	---
Fairburn	7e	---	---	---	---	---
Ucross	4e	---	---	---	---	---
210:						
Shingle	7e	---	---	---	---	---
Taluce	7e	---	---	---	---	---
215:						
Theedle	6e	---	---	---	---	---
Kishona	4e	---	---	---	---	---
216:						
Theedle	6e	---	---	---	---	---
Kishona	4e	---	---	---	---	---
Shingle	7e	---	---	---	---	---
217:						
Theedle	6e	---	---	---	---	---
Shingle	7e	---	---	---	---	---
219:						
Torriarents	6e	---	---	---	---	---
Torriorthents	6e	---	---	---	---	---
220:						
Pitchdraw	6e	---	---	---	---	---
Ashollow	4e	---	---	---	---	---
Niobrara	7e	---	---	---	---	---
221:						
Turnercrest	6e	---	---	---	---	---
Keeline	4e	---	---	---	---	---
Taluce	7e	---	---	---	---	---
223:						
Ucross	4e	---	1.00	---	0.80	---
224:						
Ucross	4e	---	1.10	---	0.80	---
Iwait	4e	---	1.10	---	0.80	---
225:						
Ucross	6e	---	---	---	---	---
Iwait	4e	---	---	---	---	---
Fairburn	7e	---	---	---	---	---

Nonirrigated Yields by Map Unit Component--Continued

Map symbol and soil name	Land capability	Barley	Grass hay	Oats	Pasture	Winter wheat
		Bu	*Tons*	*Bu*	*AUM*	*Bu*
228:						
Ulm	3e	32.00	1.00	37.00	0.80	32.00
Renohill	4e	32.00	1.00	37.00	0.80	32.00
229:						
Ulm	4e	---	---	---	---	---
Renohill	4e	---	---	---	---	---
233:						
Ustic Torriorthents, gullied	7e	---	---	---	---	---
234:						
Ustic Torriorthents	7e	---	---	---	---	---
Badland	8	---	---	---	---	---
236:						
Vonalee	4e	---	---	---	---	---
Terro	4e	---	---	---	---	---
238:						
Vonalf	4e	---	---	---	---	---
Xema	4e	---	---	---	---	---
239:						
Ironbutte	7s	---	---	---	---	---
Fairburn	7e	---	---	---	---	---
Mittenbutte	7e	---	---	---	---	---
241:						
Ironbutte	7s	---	---	---	---	---
Ironbutte, thin solum	7s	---	---	---	---	---
244:						
Muleherder	6s	---	---	---	---	---
Ironbutte	7s	---	---	---	---	---
248:						
Ziggy	4e	35.00	1.10	40.00	0.80	35.00
Iwait	4e	35.00	1.10	40.00	0.80	35.00
249:						
Ziggy	4e	---	1.10	---	0.80	---
Iwait	4e	---	1.10	---	0.80	---
250:						
Ziggy	4e	---	---	---	---	---
Ucross	4e	---	---	---	---	---
Oldwolf	4e	---	---	---	---	---

Nonirrigated Yields by Map Unit Component--Continued

Map symbol and soil name	Land capability	Barley	Grass hay	Oats	Pasture	Winter wheat
		Bu	*Tons*	*Bu*	*AUM*	*Bu*
251:						
Water	---	---	---	---	---	---
252:						
Absted	6s	---	---	---	---	---
Slickspots	8	---	---	---	---	---
253:						
Absted	6s	---	---	---	---	---
Arvada	6s	---	---	---	---	---
Slickspots	8	---	---	---	---	---
254:						
Badland	8	---	---	---	---	---
Lismas	7e	---	---	---	---	---
255:						
Bidman	3e	---	1.00	---	0.70	---
Parmleed	4e	---	1.00	---	0.70	---
256:						
Bidman	4e	35.00	---	40.00	---	25.00
Ulm	4e	35.00	---	40.00	---	25.00
257:						
Bonfri, deep	3e	35.00	1.10	40.00	0.80	35.00
Bonfri	4e	35.00	1.10	40.00	0.80	35.00
258:						
Bonfri	4e	---	---	---	---	---
Kirby	6s	---	---	---	---	---
259:						
Bonfri	4e	---	---	---	---	---
Twilight	4e	---	---	---	---	---
Blacksheep	7e	---	---	---	---	---
260:						
Cabbart, wooded	7e	---	---	---	---	---
Volborg, wooded	7e	---	---	---	---	---
Badland	8	---	---	---	---	---
261:						
Cabbart	7e	---	---	---	---	---
Yawdim	7e	---	---	---	---	---
Badland	8s	---	---	---	---	---
262:						
Cambria	3e	---	1.00	---	0.70	---

Nonirrigated Yields by Map Unit Component--Continued

Map symbol and soil name	Land capability	Barley	Grass hay	Oats	Pasture	Winter wheat
		Bu	*Tons*	*Bu*	*AUM*	*Bu*
262:(cont.)						
Kishona	4e	---	1.00	---	0.70	---
Zigweid	4e	---	1.00	---	0.70	---
263:						
Cedar Butte	6s	---	---	---	---	---
Slickspots	8	---	---	---	---	---
264:						
Clarkelen	4e	---	1.00	---	0.70	---
Draknab	4e	---	1.00	---	0.70	---
265:						
Clarkelen	4e	---	1.00	---	0.70	---
Draknab	4e	---	1.00	---	0.70	---
Boruff	5w	---	1.00	---	0.70	---
266:						
Coaliams, moderately saline	6s	32.00	1.10	37.00	0.80	32.00
267:						
Cromack	4e	35.00	1.10	40.00	0.80	35.00
Samsil	7e	20.00	0.60	25.00	0.60	20.00
268:						
Decolney	3e	32.00	1.00	37.00	0.70	32.00
Hiland	3e	32.00	1.00	37.00	0.70	32.00
269:						
Decolney	4e	---	---	---	---	---
Hiland	4e	---	---	---	---	---
270:						
Deekay	3e	35.00	1.10	40.00	0.80	35.00
Deekay, stratified substratum	3e	35.00	1.00	40.00	0.80	35.00
271:						
Delpoint	4e	---	---	---	---	---
Cabbart	7e	---	---	---	---	---
272:						
Delpoint	4e	---	---	---	---	---
Yamacall	4e	---	---	---	---	---
Cabbart	7e	---	---	---	---	---
273:						
Delpoint, wooded	4e	---	---	---	---	---
Yamacall, wooded	4e	---	---	---	---	---

Nonirrigated Yields by Map Unit Component--Continued

Map symbol and soil name	Land capability	Barley	Grass hay	Oats	Pasture	Winter wheat
		Bu	*Tons*	*Bu*	*AUM*	*Bu*
273:(cont.)						
Cabbart, wooded	7e	---	---	---	---	---
274:						
Denied access	---	---	---	---	---	---
275:						
Echeta	4e	---	1.10	---	0.80	---
Moorhead	3e	---	1.10	---	0.80	---
276:						
Elwop, wooded	4e	---	---	---	---	---
Mittenbutte, wooded	7e	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---
277:						
Fairburn	7e	---	---	---	---	---
Mittenbutte	7e	---	---	---	---	---
Badland	8	---	---	---	---	---
278:						
Fairburn	7e	---	---	---	---	---
Samsil	7e	---	---	---	---	---
Badland	8	---	---	---	---	---
279:						
Fairburn, wooded	7e	---	---	---	---	---
Samsil, wooded	7e	---	---	---	---	---
Badland	8	---	---	---	---	---
280:						
Felix	5w	---	---	---	---	---
281:						
Foreleft	3e	35.00	1.10	40.00	0.80	35.00
282:						
Foreleft	3e	35.00	1.10	40.00	0.80	35.00
Bonfri	4e	35.00	1.10	40.00	0.80	35.00
283:						
Gateson, wooded	4e	---	---	---	---	---
Xema, wooded	4e	---	---	---	---	---
Mittenbutte, wooded	7e	---	---	---	---	---
284:						
Haverdad	4e	---	1.00	---	0.70	---

Nonirrigated Yields by Map Unit Component--Continued

Map symbol and soil name	Land capability	Barley	Grass hay	Oats	Pasture	Winter wheat
		Bu	*Tons*	*Bu*	*AUM*	*Bu*
285:						
Haverdad	4e	---	1.00	---	0.70	---
Boruff	5w	---	1.00	---	0.70	---
286:						
Havre	4e	---	1.00	---	0.80	---
Bigsandy	5w	---	1.00	---	0.80	---
287:						
Hiland	4e	30.00	---	35.00	---	20.00
Bowbac	4e	20.00	---	30.00	---	20.00
288:						
Hiland	3e	32.00	1.00	37.00	0.70	32.00
Bowbac	4e	32.00	1.00	37.00	0.70	32.00
289:						
Hiland	4e	---	---	---	---	---
Bowbac	4e	---	---	---	---	---
290:						
Hiland	4e	30.00	---	35.00	---	20.00
Decolney	4e	25.00	---	30.00	---	20.00
291:						
Ironbutte, wooded	6s	---	---	---	---	---
Fairburn, wooded	7e	---	---	---	---	---
Mittenbutte, wooded	7e	---	---	---	---	---
292:						
Jaywest	3e	35.00	1.10	40.00	0.80	35.00
Jaywest, stratified substratum	3e	35.00	1.10	40.00	0.80	35.00
293:						
Jaywest, saline substratum	4s	---	---	---	---	---
Cedar Butte	6s	---	---	---	---	---
Slickspots	8	---	---	---	---	---
294:						
Kirby, wooded	6s	---	---	---	---	---
Cabbart, wooded	7e	---	---	---	---	---
Blacksheep, wooded	7e	---	---	---	---	---

Nonirrigated Yields by Map Unit Component--Continued

Map symbol and soil name	Land capability	Barley	Grass hay	Oats	Pasture	Winter wheat
		Bu	*Tons*	*Bu*	*AUM*	*Bu*
295:						
Lismas------------------	7e	---	---	---	---	---
Sabatka-----------------	4e	---	---	---	---	---
Xema--------------------	4e	---	---	---	---	---
296:						
Megonot-----------------	4e	35.00	1.10	40.00	0.80	35.00
Yawdim------------------	7e	20.00	0.70	25.00	0.50	20.00
297:						
Muleherder, wooded------	6s	---	---	---	---	---
Ironbutte, wooded-------	7s	---	---	---	---	---
298:						
Nuncho------------------	3e	38.00	1.20	40.00	0.80	38.00
299:						
Oldwolf-----------------	4e	---	---	---	---	---
Fairburn----------------	7e	---	---	---	---	---
300:						
Oshoto------------------	3e	35.00	1.10	40.00	0.80	35.00
Klinedraw---------------	4e	35.00	1.10	40.00	0.80	35.00
301:						
Oshoto------------------	4e	---	---	---	---	---
Klinedraw---------------	4e	---	---	---	---	---
302:						
Oshoto------------------	3e	35.00	1.10	40.00	0.80	35.00
Moorhead----------------	3e	35.00	1.10	40.00	0.80	35.00
303:						
Oshoto------------------	3e	35.00	1.10	40.00	0.80	35.00
Ziggy-------------------	3e	35.00	1.10	40.00	0.80	35.00
304:						
Parmleed----------------	4e	40.00	1.00	50.00	1.00	40.00
Bidman------------------	3e	40.00	1.00	50.00	1.00	40.00
305:						
Pinehill----------------	3e	35.00	1.10	40.00	0.80	35.00
306:						
Pinehill----------------	3e	35.00	1.10	40.00	0.80	35.00
Pylon-------------------	4e	35.00	1.10	40.00	0.80	35.00
307:						
Pinehill, loam----------	3e	35.00	1.10	40.00	0.80	35.00
Pinehill, clay loam-----	3e	35.00	1.10	40.00	0.80	35.00

Nonirrigated Yields by Map Unit Component--Continued

Map symbol and soil name	Land capability	Barley	Grass hay	Oats	Pasture	Winter wheat
		Bu	*Tons*	*Bu*	*AUM*	*Bu*
308:						
Pinehill----------------	3e	35.00	1.10	40.00	0.80	35.00
Pylon-------------------	4e	35.00	1.10	40.00	0.80	35.00
309:						
Pitchdraw---------------	4e	---	---	---	---	---
Ashollow----------------	4e	---	---	---	---	---
Mittenbutte-------------	7e	---	---	---	---	---
310:						
Rockypoint--------------	4e	---	1.10	---	0.80	---
311:						
Rockypoint--------------	4e	---	1.10	---	0.80	---
Boruff------------------	5w	---	1.10	---	0.80	---
312:						
Rockypoint--------------	4e	---	1.00	---	0.80	---
Sodawells---------------	4e	---	1.00	---	0.80	---
313:						
Savageton---------------	4e	32.00	1.00	37.00	0.80	32.00
Samday------------------	6e	20.00	0.60	25.00	0.60	20.00
314:						
Savageton---------------	4e	---	---	---	---	---
Silhouette--------------	4e	---	---	---	---	---
315:						
Shingle-----------------	7e	---	---	---	---	---
Taluce------------------	7e	---	---	---	---	---
Badland-----------------	8	---	---	---	---	---
316:						
Shingle, wooded---------	6e	---	---	---	---	---
Taluce, wooded----------	6e	---	---	---	---	---
Badland-----------------	8	---	---	---	---	---
317:						
Silhouette--------------	4e	---	---	---	---	---
Ulm---------------------	3e	---	---	---	---	---
318:						
Sodawells---------------	4e	---	1.10	---	0.80	---
Pathfinder--------------	4e	---	1.00	---	0.70	---
Boruff------------------	5w	---	1.00	---	0.80	---

Nonirrigated Yields by Map Unit Component--Continued

Map symbol and soil name	Land capability	Barley	Grass hay	Oats	Pasture	Winter wheat
		Bu	*Tons*	*Bu*	*AUM*	*Bu*
319:						
Spottedhorse	4e	35.00	1.10	40.00	0.80	35.00
Leiter	4e	35.00	1.10	40.00	0.80	35.00
320:						
Stetter	4s	---	---	---	---	---
321:						
Swanboy	6s	---	---	---	---	---
Cedar Butte	6s	---	---	---	---	---
Slickspots	8	---	---	---	---	---
322:						
Toby	4e	---	---	---	---	---
Twilight	4e	---	---	---	---	---
Blacksheep	7e	---	---	---	---	---
323:						
Ucross	4e	35.00	1.10	40.00	0.80	35.00
Fairburn	7e	20.00	0.60	25.00	0.60	20.00
324:						
Ucross	6e	---	---	---	---	---
Fairburn	7e	---	---	---	---	---
325:						
Ucross, wooded	4e	---	---	---	---	---
Fairburn, wooded	7e	---	---	---	---	---
326:						
Ucross, wooded	4e	---	---	---	---	---
Iwait, wooded	4e	---	---	---	---	---
Fairburn, wooded	7e	---	---	---	---	---
327:						
Ulm	3e	32.00	1.00	37.00	0.70	32.00
Bidman	3e	32.00	1.00	37.00	0.70	32.00
328:						
Ulm	3e	32.00	1.00	37.00	0.70	32.00
329:						
Ulm	4e	40.00	1.00	50.00	1.00	35.00
330:						
Ulm	4e	---	---	---	---	---
331:						
Valent	6e	---	---	---	---	---
Duneland	7e	---	---	---	---	---

Nonirrigated Yields by Map Unit Component--Continued

Map symbol and soil name	Land capability	Barley	Grass hay	Oats	Pasture	Winter wheat
		Bu	*Tons*	*Bu*	*AUM*	*Bu*
332:						
Vanstel-----------------	3e	35.00	1.10	40.00	0.80	35.00
Pinehill----------------	3e	35.00	1.10	40.00	0.80	35.00
333:						
Vonalee-----------------	4e	---	1.00	---	0.70	---
Terro-------------------	4e	---	1.00	---	0.70	---
Taluce------------------	7e	---	0.60	---	0.60	---
334:						
Vonalf------------------	4e	---	1.00	---	0.70	---
Xema--------------------	4e	---	1.00	---	0.70	---
Mittenbutte-------------	7e	---	0.60	---	0.60	---
335:						
Wibaux------------------	7s	---	---	---	---	---
Shingle-----------------	7e	---	---	---	---	---
Taluce------------------	7e	---	---	---	---	---
336:						
Wibaux, wooded----------	7s	---	---	---	---	---
Shingle, wooded---------	7e	---	---	---	---	---
Taluce, wooded----------	7e	---	---	---	---	---
337:						
Winler------------------	4s	25.00	0.80	30.00	0.60	25.00
Twotop------------------	4s	25.00	0.80	30.00	0.60	25.00
338:						
Zigweid-----------------	4e	35.00	1.00	40.00	0.80	25.00
Cambria-----------------	4e	35.00	1.00	40.00	0.80	25.00
339:						
Zigweid-----------------	4e	25.00	---	35.00	---	20.00
Kishona-----------------	4e	25.00	---	35.00	---	20.00
Cambria-----------------	4e	30.00	---	35.00	---	20.00

Rangeland Productivity

(Only the soils that support rangeland vegetation suitable for grazing are rated.)

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
103:				
Arwite	Sandy (15-17np)	2,400	2,000	1,600
105:				
Arwite	Sandy (15-17np)	2,400	2,000	1,600
Elwop	Sandy (15-17np)	2,400	2,000	1,600
106:				
Arwite	Sandy (15-17np)	2,400	2,000	1,600
Elwop	Sandy (15-17np)	2,400	2,000	1,600
107:				
Arwite	Sandy (15-17np)	2,400	2,000	1,600
Vonalf	Sandy (15-17np)	2,400	2,000	1,600
122:				
Cushman	Loamy (10-14np)	1,500	1,200	700
Cambria	Loamy (10-14np)	1,500	1,200	700
131:				
Deekay	Loamy (15-17np)	2,300	1,900	1,500
132:				
Deekay	Loamy (15-17np)	2,300	1,900	1,500
Moorhead	Loamy (15-17np)	2,300	1,900	1,500
133:				
Deekay	Loamy (15-17np)	2,300	1,900	1,500
Moorhead	Loamy (15-17np)	2,300	1,900	1,500
134:				
Deekay	Loamy (15-17np)	2,300	1,900	1,500
Oldwolf	Loamy (15-17np)	2,300	1,900	1,500
135:				
Deekay	Loamy (15-17np)	2,300	1,900	1,500
Oldwolf	Loamy (15-17np)	2,300	1,900	1,500
136:				
Deekay	Loamy (15-17np)	2,300	1,900	1,500
Ziggy	Loamy (15-17np)	2,300	1,900	1,500
137:				
Echeta	Clayey (15-17np)	2,300	1,900	1,500
138:				
Echeta	Clayey (15-17np)	2,300	1,900	1,500
Cromack	Clayey (15-17np)	2,300	1,900	1,500

Rangeland Productivity--Continued

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
144:				
Forkwood	Loamy (10-14np)	1,500	1,200	700
146:				
Forkwood	Loamy (10-14np)	1,500	1,200	700
Cushman	Loamy (10-14np)	1,500	1,200	700
147:				
Forkwood	Loamy (10-14np)	1,500	1,200	700
Cushman	Loamy (10-14np)	1,500	1,200	700
148:				
Forkwood	Loamy (10-14np)	1,500	1,200	700
Ulm	Loamy (10-14np)	1,500	1,200	700
149:				
Forkwood	Loamy (10-14np)	1,500	1,200	700
Ulm	Loamy (10-14np)	1,500	1,200	700
151:				
Haverdad	Lowland (10-14np)	3,000	2,300	1,600
155:				
Heldt, saline	Saline Upland (10-14np)	650	500	250
Bidman, saline	Saline Lowland (10-14np)	2,200	1,700	1,400
162:				
Lismas	Shallow Clayey (10-14np)	1,000	750	450
Mittenbutte, cool	Shallow Sandy (10-14 Np)	1,300	1,000	600
Sabatka	Dense Clay (15-17np)	1,000	750	450
164:				
Lismas	Shallow Clayey (10-14np)	1,000	750	450
Sabatka	Dense Clay (10-14np)	1,000	750	450
Badland	---	---	---	---
166:				
Jaywest	Loamy (15-17np)	2,300	1,900	1,500
167:				
Jaywest	Loamy (15-17np)	2,300	1,900	1,500
Moorhead	Loamy (15-17np)	2,300	1,900	1,500
168:				
Jaywest	Loamy (15-17np)	2,300	1,900	1,500
Spottedhorse	Loamy (15-17np)	2,300	1,900	1,500

Rangeland Productivity--Continued

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
170:				
Keeline	Sandy (10-14np)	1,600	1,300	750
Tullock	Sands (10-14np)	1,700	1,400	900
174:				
Brislawn	Loamy (15-17np)	2,300	1,900	1,500
Rockybutte	Loamy (15-17np)	2,300	1,900	1,500
Ironbutte	Shallow Loamy (15-17np)	1,600	1,300	1,000
176:				
Leiter	Clayey (15-17np)	2,300	1,900	1,500
Cromack	Clayey (15-17np)	2,300	1,900	1,500
181:				
Moorhead	Clayey (15-17np)	2,300	1,900	1,500
182:				
Moorhead	Loamy (15-17np)	2,300	1,900	1,500
183:				
Moorhead	Clayey (15-17np)	2,300	1,900	1,500
Leiter	Clayey (15-17np)	2,300	1,900	1,500
184:				
Moorhead	Clayey (15-17np)	2,300	1,900	1,500
Leiter	Clayey (15-17np)	2,300	1,900	1,500
185:				
Moskee	Sandy (15-17np)	2,400	2,000	1,600
187:				
Nuncho	Loamy (15-17np)	2,300	1,900	1,500
191:				
Pits	---	---	---	---
Dumps	---	---	---	---
192:				
Platmak	Loamy (15-17np)	2,300	1,900	1,500
198:				
Recluse	Loamy (15-17np)	2,300	1,900	1,500
203:				
Rockypoint	Lowland (15-17np)	3,500	3,000	2,500
Iwait	Loamy (15-17np)	2,300	1,900	1,500
204:				
Samday	Shallow Clayey (10-14np)	1,000	750	450
Samday, cool	Very Shallow (10-14np)	500	350	250
Shingle	Shallow Loamy (10-14np)	1,200	900	450

Rangeland Productivity--Continued

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
206:				
Samday	Shallow Clayey (10-14np)	1,000	750	450
Shingle	Shallow Loamy (10-14np)	1,200	900	450
Badland	---	---	---	---
207:				
Cromack	Clayey (15-17np)	2,300	1,900	1,500
Fairburn	Shallow Loamy (15-17np)	1,600	1,300	1,000
Ucross	Loamy (15-17np)	2,300	1,900	1,500
210:				
Shingle	Shallow Loamy (10-14np)	1,200	900	450
Taluce	Shallow Sandy (10-14 Np)	1,300	1,000	600
215:				
Theedle	Loamy (10-14np)	1,500	1,200	700
Kishona	Loamy (10-14np)	1,500	1,200	700
216:				
Theedle	Loamy (10-14np)	1,500	1,200	700
Kishona	Loamy (10-14np)	1,500	1,200	700
Shingle	Shallow Loamy (10-14np)	1,200	900	450
217:				
Theedle	Loamy (10-14np)	1,500	1,200	700
Shingle	Shallow Loamy (10-14np)	1,200	900	450
219:				
Torriarents	---	---	---	---
Torriorthents	---	---	---	---
220:				
Pitchdraw	Sandy (15-17np)	2,400	2,000	1,600
Ashollow	Sandy (15-17np)	2,400	2,000	1,600
Niobrara	Shallow Sandy (15-17np)	1,600	1,300	1,000
221:				
Turnercrest	Sandy (10-14np)	1,600	1,300	750
Keeline	Sandy (10-14np)	1,600	1,300	750
Taluce	Shallow Sandy (10-14 Np)	1,300	1,000	600
223:				
Ucross	Loamy (15-17np)	2,300	1,900	1,500
224:				
Ucross	Loamy (15-17np)	2,300	1,900	1,500
Iwait	Loamy (15-17np)	2,300	1,900	1,500

Rangeland Productivity--Continued

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
225:				
Ucross	Loamy (15-17np)	2,300	1,900	1,500
Iwait	Loamy (15-17np)	2,300	1,900	1,500
Fairburn	Shallow Loamy (15-17np)	1,600	1,300	1,000
228:				
Ulm	Clayey (10-14np)	1,400	1,000	600
Renohill	Clayey (10-14np)	1,400	1,000	600
229:				
Ulm	Clayey (10-14np)	1,400	1,000	600
Renohill	Clayey (10-14np)	1,400	1,000	600
233:				
Ustic Torriorthents, gullied	---	---	---	---
234:				
Ustic Torriorthents	---	---	---	---
Badland	---	---	---	---
236:				
Vonalee	Sandy (10-14np)	1,600	1,300	750
Terro	Sandy (10-14np)	1,600	1,300	750
238:				
Vonalf	Sandy (15-17np)	2,400	2,000	1,600
Xema	Sandy (15-17np)	2,400	2,000	1,600
239:				
Ironbutte	Shallow Loamy (15-17np)	1,600	1,300	1,000
Fairburn	Shallow Loamy (15-17np)	1,600	1,300	1,000
Mittenbutte	Shallow Sandy (15-17np)	1,600	1,300	1,000
241:				
Ironbutte	Shallow Loamy (15-17np)	1,600	1,300	1,000
Ironbutte, thin solum	Very Shallow (15-17np)	500	350	250
244:				
Muleherder	Loamy (15-17np)	2,300	1,900	1,500
Ironbutte	Shallow Loamy (15-17np)	1,600	1,300	1,000
248:				
Ziggy	Loamy (15-17np)	2,300	1,900	1,500
Iwait	Loamy (15-17np)	2,300	1,900	1,500
249:				
Ziggy	Loamy (15-17np)	2,300	1,900	1,500
Iwait	Loamy (15-17np)	2,300	1,900	1,500

Rangeland Productivity--Continued

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
250:				
Ziggy	Loamy (15-17np)	2,300	1,900	1,500
Ucross	Loamy (15-17np)	2,300	1,900	1,500
Oldwolf	Loamy (15-17np)	2,300	1,900	1,500
251:				
Water	---	---	---	---
252:				
Absted	Loamy (10-14np)	1,500	1,200	700
Slickspots	---	---	---	---
253:				
Absted	Loamy (10-14np)	1,500	1,200	700
Arvada	Saline Upland (10-14np)	650	500	250
Slickspots	---	---	---	---
254:				
Badland	---	---	---	---
Lismas	Shallow Clayey (15-17np)	1,600	1,300	1,000
255:				
Bidman	Loamy (10-14np)	1,500	1,200	700
Parmleed	Loamy (10-14np)	1,500	1,200	700
256:				
Bidman	Loamy (10-14np)	1,500	1,200	700
Ulm	Loamy (10-14np)	1,500	1,200	700
257:				
Bonfri, deep	Sandy (15-17np)	2,400	2,000	1,600
Bonfri	Sandy (15-17np)	2,400	2,000	1,600
258:				
Bonfri	Loamy (15-17np)	2,300	1,900	1,500
Kirby	Shallow Loamy (15-17np)	1,600	1,300	1,000
259:				
Bonfri	Ponderosa Pine and Little Bluestem Wooded	550	425	300
Twilight	Ponderosa Pine and Little Bluestem Wooded	550	425	300
Blacksheep	Ponderosa Pine and Little Bluestem Wooded	550	425	300
260:				
Cabbart, wooded	Ponderosa Pine and Little Bluestem Wooded	550	425	300

Rangeland Productivity--Continued

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
260:(cont.)				
Volborg, wooded	Ponderosa Pine and Little Bluestem Wooded	550	425	300
Badland	---	---	---	---
261:				
Cabbart	Shallow Loamy (15-17np)	1,600	1,300	1,000
Yawdim	Shallow Clayey (15-17np)	1,600	1,300	1,000
Badland	---	---	---	---
262:				
Cambria	Loamy (10-14np)	1,500	1,200	700
Kishona	Loamy (10-14np)	1,500	1,200	700
Zigweid	Loamy (10-14np)	1,500	1,200	700
263:				
Cedar Butte	Saline Upland (15-17np)	1,500	1,100	700
Slickspots	---	---	---	---
264:				
Clarkelen	Lowland (10-14np)	3,000	2,300	1,600
Draknab	Lowland (10-14np)	3,000	2,300	1,600
265:				
Clarkelen	Lowland (10-14np)	3,000	2,300	1,600
Draknab	Lowland (10-14np)	3,000	2,300	1,600
Boruff	Subirrigated (10-14np)	4,500	4,000	3,500
266:				
Coaliams, moderate saline	Lowland (15-17np)	3,300	2,900	2,500
267:				
Cromack	Clayey (15-17np)	2,300	1,900	1,500
Samsil	Shallow Clayey (15-17np)	1,600	1,300	1,000
268:				
Decolney	Sandy (10-14np)	1,600	1,300	750
Hiland	Sandy (10-14np)	1,600	1,300	750
269:				
Decolney	Sandy (10-14np)	1,600	1,300	750
Hiland	Sandy (10-14np)	1,600	1,300	750
270:				
Deekay	Loamy (15-17np)	2,300	1,900	1,500
Deekay, stratified substratum	Loamy (15-17np)	2,300	1,900	1,500

Rangeland Productivity--Continued

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
271:				
Delpoint	Loamy (15-17np)	2,300	1,900	1,500
Cabbart	Shallow Loamy (15-17np)	1,600	1,300	1,000
272:				
Delpoint	Loamy (15-17np)	2,300	1,900	1,500
Yamacall	Loamy (15-17np)	2,300	1,900	1,500
Cabbart	Shallow Loamy (15-17np)	1,600	1,300	1,000
273:				
Delpoint, wooded	Ponderosa Pine and Little Bluestem Wooded	550	425	300
Yamacall, wooded	Ponderosa Pine and Little Bluestem Wooded	550	425	300
Cabbart, wooded	Ponderosa Pine and Little Bluestem Wooded	550	425	300
274:				
Denied access	---	---	---	---
275:				
Echeta	Clayey (15-17np)	2,300	1,900	1,500
Moorhead	Clayey (15-17np)	2,300	1,900	1,500
276:				
Elwop, wooded	Ponderosa Pine and Little Bluestem Wooded	550	425	300
Mittenbutte, wooded	Ponderosa Pine and Little Bluestem Wooded	550	425	300
Rock outcrop	---	---	---	---
277:				
Fairburn	Shallow Loamy (15-17np)	1,600	1,300	1,000
Mittenbutte	Shallow Sandy (15-17np)	1,600	1,300	1,000
Badland	---	---	---	---
278:				
Fairburn	Shallow Loamy (15-17np)	1,600	1,300	1,000
Samsil	Shallow Clayey (15-17np)	1,600	1,300	1,000
Badland	---	---	---	---
279:				
Fairburn, wooded	Ponderosa Pine and Little Bluestem Wooded	550	425	300
Samsil, wooded	Ponderosa Pine and Little Bluestem Wooded	550	425	300
Badland	---	---	---	---

Rangeland Productivity--Continued

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
280:				
Felix	Clayey Overflow (15-17np)	3,300	2,900	2,500
281:				
Foreleft	Loamy (15-17np)	2,300	1,900	1,500
282:				
Foreleft	Loamy (15-17np)	2,300	1,900	1,500
Bonfri	Loamy (15-17np)	2,300	1,900	1,500
283:				
Gateson, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
Xema, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
Mittenbutte, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
284:				
Haverdad	Lowland (10-14np)	3,000	2,300	1,600
285:				
Haverdad	Lowland (10-14np)	3,000	2,300	1,600
Boruff	Subirrigated (10-14np)	4,500	4,000	3,500
286:				
Havre	Lowland (15-17np)	3,500	3,000	2,500
Bigsandy	Lowland (15-17np)	3,500	3,000	2,500
287:				
Hiland	Sandy (10-14np)	1,600	1,300	750
Bowbac	Sandy (10-14np)	1,600	1,300	750
288:				
Hiland	Sandy (10-14np)	1,600	1,300	750
Bowbac	Sandy (10-14np)	1,600	1,300	750
289:				
Hiland	Sandy (10-14np)	1,600	1,300	750
Bowbac	Sandy (10-14np)	1,600	1,300	750
290:				
Hiland	Sandy (10-14np)	1,600	1,300	750
Decolney	Sandy (10-14np)	1,600	1,300	750
291:				
Ironbutte, wooded	Ponderosa Pine and Litte Bluestem Woodland	550	425	300
Fairburn, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300

Rangeland Productivity--Continued

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
291:(cont.)				
Mittenbutte, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
292:				
Jaywest	Loamy (15-17np)	2,300	1,900	1,500
Jaywest, stratified substratum	Loamy (15-17np)	2,300	1,900	1,500
293:				
Jaywest, saline substratum	Loamy (15-17np)	2,300	1,900	1,500
Cedar Butte	Saline Upland (15-17np)	1,500	1,100	700
Slickspots	---	---	---	---
294:				
Kirby, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
Cabbart, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
Blacksheep, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
295:				
Lismas	Shallow Clayey (15-17np)	1,600	1,300	1,000
Sabatka	Clayey (15-17np)	2,300	1,900	1,500
Xema	Sandy (15-17np)	2,400	2,000	1,600
296:				
Megonot	Clayey (15-17np)	2,300	1,900	1,500
Yawdim	Shallow Clayey (15-17np)	1,600	1,300	1,000
297:				
Muleherder, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
Ironbutte, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
298:				
Nuncho	Clayey (15-17np)	2,300	1,900	1,500
299:				
Oldwolf	Loamy (15-17np)	2,300	1,900	1,500
Fairburn	Shallow Loamy (15-17np)	1,600	1,300	1,000
300:				
Oshoto	Loamy (15-17np)	2,300	1,900	1,500
Klinedraw	Loamy (15-17np)	2,300	1,900	1,500
301:				
Oshoto	Loamy (15-17np)	2,300	1,900	1,500
Klinedraw	Loamy (15-17np)	2,300	1,900	1,500

Rangeland Productivity--Continued

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
302:				
Oshoto	Loamy (15-17np)	2,300	1,900	1,500
Moorhead	Loamy (15-17np)	2,300	1,900	1,500
303:				
Oshoto	Loamy (15-17np)	2,300	1,900	1,500
Ziggy	Loamy (15-17np)	2,300	1,900	1,500
304:				
Parmleed	Loamy (10-14np)	1,500	1,200	700
Bidman	Loamy (10-14np)	1,500	1,200	700
305:				
Pinehill	Clayey (15-17np)	2,300	1,900	1,500
306:				
Pinehill	Clayey (15-17np)	2,300	1,900	1,500
Pylon	Clayey (15-17np)	2,300	1,900	1,500
307:				
Pinehill, loam	Loamy (15-17np)	2,300	1,900	1,500
Pinehill, clay loam	Clayey (15-17np)	2,300	1,900	1,500
308:				
Pinehill	Loamy (15-17np)	2,300	1,900	1,500
Pylon	Loamy (15-17np)	2,300	1,900	1,500
309:				
Pitchdraw	Sandy (15-17np)	2,400	2,000	1,600
Ashollow	Sandy (15-17np)	2,400	2,000	1,600
Mittenbutte	Shallow Sandy (10-14 Np)	1,300	1,000	600
310:				
Rockypoint	Lowland (15-17np)	3,500	3,000	2,500
311:				
Rockypoint	Lowland (15-17np)	3,500	3,000	2,500
Boruff	Lowland (15-17np)	3,500	3,000	2,500
312:				
Rockypoint	Lowland (15-17np)	3,500	3,000	2,500
Sodawells	Lowland (15-17np)	3,500	3,000	2,500
313:				
Savageton	Clayey (10-14np)	1,400	1,000	600
Samday	Shallow Clayey (10-14np)	1,000	750	450
314:				
Savageton	Clayey (10-14np)	1,400	1,000	600
Silhouette	Clayey (10-14np)	1,400	1,000	600

Rangeland Productivity--Continued

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
315:				
Shingle	Shallow Loamy (10-14np)	1,200	900	450
Taluce	Shallow Sandy (10-14 Np)	1,300	1,000	600
Badland	---	---	---	---
316:				
Shingle, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
Taluce, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
Badland	---	---	---	---
317:				
Silhouette	Clayey (10-14np)	1,400	1,000	600
Ulm	Clayey (10-14np)	1,400	1,000	600
318:				
Sodawells	Lowland (15-17np)	3,500	3,000	2,500
Pathfinder	Lowland (15-17np)	3,500	3,000	2,500
Boruff	Lowland (15-17np)	3,500	3,000	2,500
319:				
Spottedhorse	Loamy (15-17np)	2,300	1,900	1,500
Leiter	Clayey (15-17np)	2,300	1,900	1,500
320:				
Stetter	Lowland (15-17np)	3,500	3,000	2,500
321:				
Swanboy	Clayey (15-17np)	2,300	1,900	1,500
Cedar Butte	Saline Upland (15-17np)	1,500	1,100	700
Slickspots	---	---	---	---
322:				
Toby	Sandy (15-17np)	2,400	2,000	1,600
Twilight	Sandy (15-17np)	2,400	2,000	1,600
Blacksheep	Shallow Sandy (10-14 Np)	1,300	1,000	600
323:				
Ucross	Loamy (15-17np)	2,300	1,900	1,500
Fairburn	Shallow Loamy (15-17np)	1,600	1,300	1,000
324:				
Ucross	Loamy (15-17np)	2,300	1,900	1,500
Fairburn	Shallow Loamy (15-17np)	1,600	1,300	1,000

Rangeland Productivity--Continued

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
325:				
Ucross, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
Fairburn, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
326:				
Ucross, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
Iwait, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
Fairburn, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
327:				
Ulm	Clayey (10-14np)	1,400	1,000	600
Bidman	Loamy (10-14np)	1,500	1,200	700
328:				
Ulm	Clayey (10-14np)	1,400	1,000	600
329:				
Ulm	Clayey (10-14np)	1,400	1,000	600
330:				
Ulm	Clayey (10-14np)	1,400	1,000	600
331:				
Valent	Sands (15-17np)	2,700	2,300	1,900
Duneland	---	---	---	---
332:				
Vanstel	Loamy (15-17np)	2,300	1,900	1,500
Pinehill	Clayey (15-17np)	2,300	1,900	1,500
333:				
Vonalee	Sandy (10-14np)	1,600	1,300	750
Terro	Sandy (10-14np)	1,600	1,300	750
Taluce	Shallow Sandy (10-14 Np)	1,300	1,000	600
334:				
Vonalf	Sandy (15-17np)	2,400	2,000	1,600
Xema	Sandy (15-17np)	2,400	2,000	1,600
Mittenbutte	Shallow Sandy (15-17np)	1,600	1,300	1,000
335:				
Wibaux	Shallow Loamy (10-14np)	1,200	900	450
Shingle	Shallow Loamy (10-14np)	1,200	900	450
Taluce	Shallow Sandy (10-14 Np)	1,300	1,000	600

Rangeland Productivity--Continued

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Normal year	Unfavorable year
		Lb/acre	*Lb/acre*	*Lb/acre*
336:				
Wibaux, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
Shingle, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
Taluce, wooded	Ponderosa Pine and Little Bluestem Woodland	550	425	300
337:				
Winler	Dense Clay (15-17np)	1,000	750	450
Twotop	Dense Clay (15-17np)	1,000	750	450
338:				
Zigweid	Loamy (10-14np)	1,500	1,200	700
Cambria	Loamy (10-14np)	1,500	1,200	700
339:				
Zigweid	Loamy (10-14np)	1,500	1,200	700
Kishona	Loamy (10-14np)	1,500	1,200	700
Cambria	Loamy (10-14np)	1,500	1,200	700

Suitability of Soils for Rangeland Practices

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
103:			
Arwite	Poorly suited Seepage	Moderately well suited Wind erosion	Moderately suited Sandy surface
105:			
Arwite	Poorly suited Seepage	Moderately well suited Wind erosion	Moderately suited Sandy surface
Elwop	Poorly suited Seepage Depth to bedrock	Moderately well suited Wind erosion	Moderately suited Sandy surface
106:			
Arwite	Poorly suited Seepage	Moderately suited Water erosion Slope	Moderately suited Sandy surface Slope
Elwop	Poorly suited Seepage Depth to bedrock	Moderately suited Water erosion Slope	Moderately suited Sandy surface Slope
107:			
Arwite	Poorly suited Seepage	Moderately well suited Wind erosion	Moderately suited Sandy surface
Vonalf	Poorly suited Seepage	Moderately well suited Wind erosion	Moderately suited Sandy surface
122:			
Cushman	Poorly suited Depth to bedrock	Moderately well suited Low precipitation	Moderately well suited Low precipitation
Cambria	Moderately well suited Seepage	Moderately well suited Low precipitation	Moderately well suited Low precipitation
131:			
Deekay	Moderately well suited Seepage	Well suited	Well suited
132:			
Deekay	Moderately well suited Seepage	Well suited	Well suited
Moorhead	Well suited	Well suited	Well suited
133:			
Deekay	Moderately well suited Seepage Slope	Moderately suited Slope	Moderately suited Slope
Moorhead	Moderately well suited Slope	Moderately suited Slope	Moderately suited Slope
134:			
Deekay	Moderately well suited Seepage	Well suited	Well suited
Oldwolf	Poorly suited Depth to bedrock	Well suited	Well suited

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
135:			
Deekay	Moderately well suited Seepage Slope	Moderately suited Slope	Moderately suited Slope
Oldwolf	Poorly suited Depth to bedrock	Moderately suited Slope	Moderately suited Slope
136:			
Deekay	Moderately well suited Seepage	Well suited	Well suited
Ziggy	Moderately well suited Seepage	Well suited	Well suited
137:			
Echeta	Well suited	Well suited	Well suited
138:			
Echeta	Moderately suited Slope	Moderately suited Slope	Moderately suited Slope
Cromack	Poorly suited Depth to bedrock	Moderately suited Slope	Moderately suited Slope
144:			
Forkwood	Moderately well suited Seepage	Moderately well suited Low precipitation	Moderately well suited Low precipitation
146:			
Forkwood	Moderately well suited Seepage	Moderately well suited Low precipitation	Moderately well suited Low precipitation
Cushman	Poorly suited Depth to bedrock	Moderately well suited Low precipitation	Moderately well suited Low precipitation
147:			
Forkwood	Moderately suited Slope	Moderately suited Slope	Moderately suited Slope
Cushman	Poorly suited Depth to bedrock	Moderately suited Slope	Moderately suited Slope
148:			
Forkwood	Moderately well suited Seepage	Moderately well suited Low precipitation	Moderately well suited Low precipitation
Ulm	Well suited	Moderately well suited Low precipitation	Moderately well suited Low precipitation
149:			
Forkwood	Moderately suited Slope	Moderately suited Slope	Moderately suited Slope
Ulm	Moderately suited Slope	Moderately suited Slope	Moderately suited Slope
151:			
Haverdad	Moderately well suited Seepage	Moderately well suited Low precipitation	Moderately well suited Low precipitation

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
155:			
Heldt	Well suited	Poorly suited Salinity	Poorly suited Salinity
Bidman	Well suited	Poorly suited Salinity	Poorly suited Salinity
162:			
Lismas	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Slope Depth to bedrock
Mittenbutte, cool	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Slope Depth to bedrock
Sabatka	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Slope
164:			
Lismas	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Slope Depth to bedrock
Sabatka	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Slope
Badland	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Slope
166:			
Jaywest	Well suited	Well suited	Well suited
167:			
Jaywest	Well suited	Well suited	Well suited
Moorhead	Well suited	Well suited	Well suited
168:			
Jaywest	Well suited	Well suited	Well suited
Spottedhorse	Poorly suited Depth to bedrock	Well suited	Well suited
170:			
Keeline	Poorly suited Seepage Slope	Poorly suited Water erosion Slope	Moderately well suited Sandy surface Slope
Tullock	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Moderately well suited Sandy surface Slope
174:			
Brislawn	Poorly suited Seepage Depth to bedrock	Well suited	Well suited

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
174:(cont.)			
Rockybutte	Poorly suited Seepage Depth to bedrock	Well suited	Well suited
Ironbutte	Poorly suited Seepage Depth to bedrock	Moderately suited Depth to bedrock	Poorly suited Depth to bedrock
176:			
Leiter	Poorly suited Depth to bedrock	Moderately suited Water erosion	Well suited
Cromack	Poorly suited Depth to bedrock	Moderately suited Water erosion	Well suited
181:			
Moorhead	Well suited	Well suited	Well suited
182:			
Moorhead	Well suited	Well suited	Well suited
183:			
Moorhead	Well suited	Well suited	Well suited
Leiter	Poorly suited Depth to bedrock	Well suited	Well suited
184:			
Moorhead	Moderately suited Slope	Moderately suited Slope	Moderately suited Slope
Leiter	Poorly suited Depth to bedrock	Moderately suited Slope	Moderately suited Slope
185:			
Moskee	Poorly suited Seepage	Moderately well suited Wind erosion	Moderately suited Sandy surface
187:			
Nuncho	Well suited	Well suited	Well suited
191:			
Pits	---	---	---
Dumps	---	---	---
192:			
Platmak	Well suited	Well suited	Well suited
198:			
Recluse	Moderately well suited Seepage	Well suited	Well suited
203:			
Rockypoint	Moderately well suited Seepage	Well suited	Well suited
Iwait	Moderately well suited Seepage	Well suited	Well suited

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
204:			
Samday	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Depth to bedrock Slope
Samday, cool	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Depth to bedrock Slope
Shingle	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Depth to bedrock Slope
206:			
Samday	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Depth to bedrock Slope
Shingle	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Depth to bedrock Slope
Badland	Poorly suited Depth to bedrock Slope	Poorly suited Slope Depth to bedrock	Poorly suited Depth to bedrock Slope
207:			
Cromack	Poorly suited Depth to bedrock	Moderately suited Water erosion	Well suited
Fairburn	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Depth to bedrock Slope
Ucross	Poorly suited Depth to bedrock Slope	Moderately suited Water erosion Slope	Moderately suited Slope
210:			
Shingle	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
Taluce	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
215:			
Theedle	Poorly suited Depth to bedrock	Poorly suited Slope	Moderately suited Slope
Kishona	Moderately well suited Seepage	Poorly suited Slope	Moderately suited Slope
216:			
Theedle	Poorly suited Depth to bedrock	Poorly suited Slope	Moderately suited Slope
Kishona	Moderately well suited Seepage	Moderately suited Water erosion	Moderately well suited Low precipitation

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
216:(cont.)			
Shingle	Poorly suited Depth to bedrock Slope	Poorly suited Slope Depth to bedrock	Poorly suited Slope Depth to bedrock
217:			
Theedle	Poorly suited Depth to bedrock	Poorly suited Water erosion	Moderately suited Slope
Shingle	Poorly suited Depth to bedrock Slope	Poorly suited Slope Depth to bedrock	Poorly suited Slope Depth to bedrock
219:			
Torriarents	---	---	---
Torriorthents	---	---	---
220:			
Pitchdraw	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Moderately suited Sandy surface Slope
Ashollow	Poorly suited Seepage	Moderately suited Water erosion	Moderately suited Sandy surface
Niobrara	Poorly suited Depth to bedrock	Moderately suited Depth to bedrock	Poorly suited Sandy surface Depth to bedrock
221:			
Turnercrest	Poorly suited Depth to bedrock	Poorly suited Water erosion	Moderately suited Sandy surface Slope
Keeline	Poorly suited Seepage	Moderately suited Water erosion	Moderately suited Sandy surface
Taluce	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Sandy surface Depth to bedrock Slope
223:			
Ucross	Poorly suited Depth to bedrock	Moderately well suited Water erosion	Well suited
224:			
Ucross	Poorly suited Depth to bedrock	Well suited	Well suited
Iwait	Moderately well suited Seepage	Well suited	Well suited
225:			
Ucross	Poorly suited Depth to bedrock	Moderately well suited Water erosion	Well suited
Iwait	Moderately well suited Seepage	Moderately well suited Water erosion	Well suited

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
225:(cont.)			
Fairburn	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Depth to bedrock Slope
228:			
Ulm	Well suited	Moderately well suited Low precipitation	Moderately well suited Low precipitation
Renohill	Poorly suited Depth to bedrock	Moderately well suited Low precipitation	Moderately well suited Low precipitation
229:			
Ulm	Moderately suited Slope	Moderately suited Water erosion	Moderately well suited Low precipitation
Renohill	Poorly suited Depth to bedrock	Moderately suited Water erosion	Moderately well suited Low precipitation
233:			
Ustic Torriorthents	---	---	---
234:			
Ustic Torriorthents	---	---	---
Badland	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope Depth to bedrock	Poorly suited Slope Depth to bedrock
236:			
Vonalee	Poorly suited Seepage	Moderately well suited Wind erosion Water erosion Low precipitation	Moderately suited Sandy surface
Terro	Poorly suited Depth to bedrock	Moderately well suited Wind erosion Water erosion Low precipitation	Moderately suited Sandy surface
238:			
Vonalf	Poorly suited Seepage	Moderately well suited Wind erosion Water erosion	Moderately suited Sandy surface
Xema	Poorly suited Depth to bedrock	Moderately well suited Wind erosion Water erosion	Moderately suited Sandy surface
239:			
Ironbutte	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
Fairburn	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
Mittenbutte	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
241:			
Ironbutte	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
Ironbutte, thin solum	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope Depth to bedrock	Poorly suited Slope Depth to bedrock
244:			
Muleherder	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Moderately suited Slope
Ironbutte	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
248:			
Ziggy	Moderately well suited Seepage	Well suited	Well suited
Iwait	Moderately well suited Seepage	Well suited	Well suited
249:			
Ziggy	Moderately well suited Seepage Slope	Moderately well suited Water erosion	Well suited
Iwait	Moderately well suited Seepage Slope	Moderately well suited Water erosion	Well suited
250:			
Ziggy	Moderately well suited Seepage	Moderately well suited Water erosion	Well suited
Ucross	Poorly suited Depth to bedrock	Moderately well suited Water erosion	Well suited
Oldwolf	Poorly suited Depth to bedrock	Moderately well suited Water erosion	Well suited
241:			
Water	---	---	---
252:			
Absted	Well suited	Poorly suited Too alkaline Salinity	Poorly suited Too alkaline Salinity
Slickspots	Well suited	Poorly suited	Poorly suited
253:			
Absted	Well suited	Poorly suited Too alkaline Salinity	Poorly suited Too alkaline Salinity

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices: Stockwater Ponds	Rangeland practices: Range Seeding	Rangeland practices: Range Renovation
253:(cont.)			
Arvada	Well suited	Poorly suited Too alkaline Salinity	Poorly suited Too alkaline Salinity
Slickspots	Well suited	Poorly suited Too alkaline Salinity	Poorly suited Too alkaline Salinity
254:			
Badland	Poorly suited Depth to bedrock Slope	Poorly suited Depth to bedrock Water erosion Slope	Poorly suited Slope Depth to bedrock
Lismas	Poorly suited Depth to bedrock Slope	Poorly suited Depth to bedrock Water erosion Slope	Poorly suited Slope Depth to bedrock
255:			
Bidman	Well suited	Moderately well suited Low precipitation	Moderately well suited Low precipitation
Parmleed	Poorly suited Depth to bedrock	Moderately well suited Low precipitation	Moderately well suited Low precipitation
256:			
Bidman	Well suited	Moderately well suited Low precipitation	Moderately well suited Low precipitation
Ulm	Well suited	Moderately well suited Low precipitation	Moderately well suited Low precipitation
257:			
Bonfri, deep	Poorly suited Seepage	Moderately well suited Wind erosion	Moderately suited Sandy surface
Bonfri	Poorly suited Seepage Depth to bedrock	Moderately well suited Wind erosion	Moderately suited Sandy surface
258:			
Bonfri	Poorly suited Seepage Depth to bedrock	Moderately well suited Wind erosion	Moderately suited Sandy surface
Kirby	Poorly suited Seepage Depth to bedrock	Moderately suited Depth to bedrock	Poorly suited Depth to bedrock
259:			
Bonfri, wooded	Poorly suited Seepage Depth to bedrock Slope	--- ---	--- ---
Twilight, wooded	Poorly suited Depth to bedrock Slope	---	---

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
259:(cont.)			
Blacksheep, wooded	Poorly suited Depth to bedrock Slope	---	---
260:			
Cabbart, wooded	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
Volborg, wooded	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
Badland	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
261:			
Cabbart	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
Yawdim	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
Badland	Poorly suited Depth to bedrock Slope	Moderately suited Depth to bedrock Slope	Poorly suited Depth to bedrock Slope
262:			
Cambria	Moderately well suited Seepage	Moderately well suited Low precipitation	Moderately well suited Low precipitation
Kishona	Moderately well suited Seepage	Moderately well suited Low precipitation	Moderately well suited Low precipitation
Zigweid	Moderately well suited Seepage	Moderately well suited Low precipitation	Moderately well suited Low precipitation
263:			
Cedarbutte	Well suited	Poorly suited Too alkaline Salinity	Poorly suited Too alkaline Salinity
Slickspots	Well suited	Poorly suited Too alkaline Salinity	Poorly suited Too alkaline Salinity
264:			
Clarkelen	Poorly suited Seepage	Moderately well suited Wind erosion Low precipitation	Moderately suited Sandy surface
Draknab	Poorly suited Seepage	Moderately well suited Wind erosion Low precipitation	Moderately suited Sandy surface

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices: Stockwater Ponds	Rangeland practices: Range Seeding	Rangeland practices: Range Renovation
265:			
Clarkelen	Poorly suited Seepage	Moderately well suited Wind erosion Low precipitation	Moderately suited Sandy surface
Draknab	Poorly suited Seepage	Moderately well suited Wind erosion Low precipitation	Moderately suited Sandy surface
Boruff	Well suited	Poorly suited Depth to saturated zone	Poorly suited Depth to saturated zone
266:			
Coaliams, moderately saline	Moderately well suited Seepage	Poorly suited Salinity	Poorly suited Salinity
267:			
Cromack	Poorly suited Depth to bedrock	Moderately well suited Water erosion	Well suited
Samsil	Poorly suited Depth to bedrock	Moderately suited Depth to bedrock	Well suited
268:			
Decolney	Poorly suited Seepage	Moderately well suited Wind erosion	Moderately suited Sandy surface
Hiland	Poorly suited Seepage	Moderately well suited Wind erosion	Moderately suited Sandy surface
269:			
Decolney	Poorly suited Seepage	Moderately well suited Wind erosion Water erosion Slope	Moderately suited Sandy surface Slope
Hiland	Poorly suited Seepage	Moderately well suited Wind erosion Water erosion Slope	Moderately suited Sandy surface Slope
270:			
Deekay	Moderately well suited Seepage	Well suited	Well suited
Deekay, stratified Substratum	Moderately well suited Seepage	Well suited	Well suited
271:			
Delpoint	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope
Cabbart	Poorly suited Depth to bedrock Slope	Moderately suited Depth to bedrock Slope	Poorly suited Depth to bedrock Slope
272:			
Delpoint	Poorly suited Depth to bedrock	Moderately well suited Water erosion	Well suited

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
272:(cont.)			
Yamacall	Moderately well suited Seepage	Moderately well suited Water erosion	Well suited
Cabbart	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Depth to bedrock Slope
273:			
Delpoint, wooded	Poorly suited Depth to bedrock	Poorly suited Water erosion	Not rated
Yamacall, wooded	Moderately well suited Seepage	Moderately suited Water erosion	Not rated
Cabbart, wooded	Poorly suited Depth to bedrock Slope	Poorly suited Slope Water erosion	Not rated
274:			
Denied access	---	---	---
275:			
Echeta	Well suited	Well suited	Well suited
Moorhead	Well suited	Well suited	Well suited
276:			
Elwop, wooded	Poorly suited Seepage Depth to bedrock Slope	---	---
Mittenbutte, wooded	Poorly suited Depth to bedrock Slope	---	---
Rock outcrop	---	---	---
277:			
Fairburn	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
Mittenbutte	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Depth to bedrock Slope	Poorly suited Depth to bedrock Slope
Badland	Poorly suited Depth to bedrock Slope	Poorly suited Depth to bedrock Slope	Poorly suited Depth to bedrock Slope
278:			
Fairburn	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
Samsil	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
278:(cont.)			
Badland	Poorly suited Depth to bedrock Slope	Moderately suited Depth to bedrock Slope	Poorly suited Depth to bedrock Slope
279:			
Fairburn, wooded	Poorly suited Depth to bedrock Slope	---	---
Samsil, wooded	Poorly suited Depth to bedrock Slope	---	---
Badland	Poorly suited Depth to bedrock Slope	---	---
280:			
Felix	Well suited	Poorly suited Depth to saturated zone	Moderately well suited Depth to saturated zone
281:			
Foreleft	Moderately well suited Seepage	Well suited	Well suited
282:			
Foreleft	Moderately well suited Seepage	Moderately suited Water erosion	Well suited
Bonfri	Poorly suited Depth to bedrock	Moderately suited Water erosion	Well suited
283:			
Gateson, wooded	Poorly suited Depth to bedrock Seepage Slope	---	---
Xema, wooded	Poorly suited Depth to bedrock Slope	Moderately suited Depth to bedrock	Poorly suited Depth to bedrock
Mittenbutte, wooded	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Depth to bedrock Slope	Poorly suited Depth to bedrock Slope
284:			
Haverdad	Poorly suited Seepage	Moderately well suited Low precipitation	Moderately well suited Low precipitation
285:			
Haverdad	Moderately well suited Seepage	Moderately well suited Low precipitation	Well suited
Boruff	Well suited	Poorly suited Depth to saturated zone	Poorly suited Depth to saturated zone

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
286:			
Havre	Moderately well suited Seepage	Well suited	Well suited
Bigsandy	Well suited	Poorly suited Depth to saturated zone	Poorly suited Depth to saturated zone
287:			
Hiland	Poorly suited Seepage	Moderately well suited Wind erosion Water erosion Low precipitation	Moderately well suited Wind erosion
Bowbac	Poorly suited Depth to bedrock	Moderately suited Water erosion	Moderately suited Sandy surface
288:			
Hiland	Poorly suited Seepage	Moderately well suited Wind erosion	Moderately suited Sandy surface
Bowbac	Poorly suited Depth to bedrock	Moderately suited Water erosion	Moderately suited Sandy surface
289:			
Hiland	Poorly suited Seepage	Moderately well suited Wind erosion Water erosion Slope	Moderately suited Sandy surface Slope
Bowbac	Poorly suited Depth to bedrock	Moderately suited Water erosion Slope	Moderately suited Sandy surface Slope
290:			
Hiland	Poorly suited Seepage Depth to bedrock	Moderately suited Water erosion	Moderately suited Sandy surface
Decolney	Poorly suited Seepage	Moderately suited Water erosion	Moderately suited Sandy surface
291:			
Ironbutte, wooded	Poorly suited Seepage Depth to bedrock Slope	---	---
Fairburn, wooded	Poorly suited Depth to bedrock Slope	---	---
Mittenbutte, wooded	Poorly suited Depth to bedrock Slope	---	---
292:			
Jaywest	Well suited	Well suited	Well suited
Jaywest, stratified substratum	Moderately well suited Seepage	Well suited	Well suited

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
293:			
Jaywest, saline	Well suited	Poorly suited Too alkaline Salinity	Poorly suited Too alkaline Salinity
Cedarbutte	Well suited	Poorly suited Too alkaline Salinity	Poorly suited Too alkaline Salinity
Slickspots	Well suited	Poorly suited Too alkaline Salinity	Poorly suited Too alkaline Salinity
294:			
Kirby, wooded	Poorly suited Seepage Depth to bedrock Slope	---	---
Cabbart, wooded	Poorly suited Depth to bedrock Slope	---	---
Blacksheep, wooded	Poorly suited Depth to bedrock Slope	---	---
295:			
Lismas	Poorly suited Depth to bedrock	Moderately suited Water erosion Slope Depth to bedrock	Poorly suited Depth to bedrock
Sabatka	Poorly suited Depth to bedrock	Moderately suited Water erosion Slope	Moderately suited Slope
Xema	Poorly suited Depth to bedrock	Moderately suited Depth to bedrock	Poorly suited Depth to bedrock
296:			
Megonot	Poorly suited Depth to bedrock	Moderately well suited Water erosion	Well suited
Yawdim	Poorly suited Depth to bedrock	Moderately suited Depth to bedrock	Well suited
297:			
Muleherder, wooded	Poorly suited Depth to bedrock Slope	---	---
Ironbutte, wooded	Poorly suited Depth to bedrock Slope	---	---
298:			
Nuncho	Well suited	Well suited	Well suited
299:			
Oldwolf	Poorly suited Depth to bedrock	Moderately well suited Water erosion	Well suited

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
299:(cont.)			
Fairburn	Poorly suited Depth to bedrock	Moderately suited Depth to bedrock	Poorly suited Depth to bedrock
300:			
Oshoto	Moderately well suited Seepage	Well suited	Well suited
Klinedraw	Poorly suited Depth to bedrock	Well suited	Well suited
301:			
Oshoto	Moderately well suited Seepage	Moderately suited Water erosion	Well suited
Klinedraw	Poorly suited Depth to bedrock	Moderately suited Water erosion	Moderately suited Slope
302:			
Oshoto	Moderately well suited Seepage	Well suited	Well suited
Moorhead	Well suited	Well suited	Well suited
303:			
Oshoto	Moderately well suited Seepage	Well suited	Well suited
Ziggy	Moderately well suited Seepage	Well suited	Well suited
304:			
Parmleed	Poorly suited Depth to bedrock	Moderately well suited Wind erosion Low precipitation	Moderately suited Sandy surface
Bidman	Moderately well suited Seepage	Moderately well suited Wind erosion Low precipitation	Moderately suited Sandy surface
305:			
Pinehill	Well suited	Well suited	Well suited
306:			
Pinehill	Well suited	Well suited	Well suited
Pylon	Poorly suited Depth to bedrock	Well suited	Well suited
307:			
Pinehill, loam	Well suited	Well suited	Well suited
Pinehill, clay loam	Well suited	Well suited	Well suited
308:			
Pinehill	Well suited	Moderately well suited Water erosion	Well suited
Pylon	Poorly suited Depth to bedrock	Moderately well suited Water erosion	Well suited

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
309:			
Pitchdraw	Poorly suited Depth to bedrock	Moderately suited Water erosion Slope	Moderately suited Sandy surface Slope
Ashollow	Moderately well suited Seepage	Moderately suited Water erosion Slope	Moderately suited Sandy surface Slope
Mittenbutte	Poorly suited Depth to bedrock	Poorly suited Water erosion	Poorly suited Depth to bedrock
310:			
Rockypoint	Moderately well suited Seepage	Well suited	Well suited
311:			
Rockypoint	Moderately well suited Seepage	Well suited	Well suited
Boruff	Well suited	Poorly suited Depth to saturated zone	Poorly suited Depth to saturated zone
312:			
Rockypoint	Moderately well suited Seepage	Well suited	Well suited
Sodawells	Poorly suited Seepage	Moderately well suited Wind erosion	Moderately suited Sandy surface
313:			
Savageton	Poorly suited Depth to bedrock	Moderately well suited Slope Low precipitation	Moderately well suited Low precipitation
Samday	Poorly suited Depth to bedrock	Moderately suited Depth to bedrock	Poorly suited Depth to bedrock
314:			
Savageton	Poorly suited Depth to bedrock	Moderately well suited Slope Low precipitation	Moderately well suited Low precipitation
Silhouette	Moderately suited Slope	Moderately suited Water erosion Slope	Moderately well suited Slope
315:			
Shingle	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Depth to bedrock Slope
Taluce	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Sandy surface Depth to bedrock Slope
Badland	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Depth to bedrock Slope

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
316:			
Shingle, wooded	Poorly suited Depth to bedrock Slope	---	---
Taluce, wooded	Poorly suited Depth to bedrock Slope	---	---
Badland	Poorly suited Depth to bedrock Slope	---	---
317:			
Silhouette	Well suited	Moderately well suited Low precipitation	Moderately well suited Low precipitation
Ulm	Well suited	Moderately well suited Low precipitation	Moderately well suited Low precipitation
318:			
Sodawells	Poorly suited Seepage	Moderately well suited Wind erosion	Moderately suited Sandy surface
Pathfinder	Poorly suited Seepage	Moderately well suited Wind erosion	Moderately suited Sandy surface
Boruff	Well suited	Poorly suited Depth to saturated zone	Poorly suited Depth to saturated zone
319:			
Spottedhorse	Poorly suited Depth to bedrock	Well suited	Well suited
Leiter	Poorly suited Depth to bedrock	Well suited	Well suited
320:			
Stetter	Well suited	Well suited	Well suited
321:			
Swanboy	Well suited	Poorly suited Salinity	Poorly suited Salinity
Cedarbutte	Well suited	Poorly suited Too alkaline Salinity	Poorly suited Too alkaline Salinity
Slickspots	Well suited	Poorly suited Too alkaline Salinity	Poorly suited Too alkaline Salinity
322:			
Toby	Poorly suited Seepage	Moderately well suited Wind erosion Water erosion	Moderately suited Sandy surface
Twilight	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Slope

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
322:(cont.)			
Blacksheep	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Depth to bedrock Slope	Poorly suited Depth to bedrock Slope
323:			
Ucross	Poorly suited Depth to bedrock	Moderately well suited Water erosion	Well suited
Fairburn	Poorly suited Depth to bedrock	Moderately suited Depth to bedrock	Poorly suited Depth to bedrock
324:			
Ucross	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope
Fairburn	Poorly suited Depth to bedrock Slope	Poorly suited Slope	Poorly suited Depth to bedrock Slope
325:			
Ucross, wooded	Poorly suited Depth to bedrock Slope	---	---
Fairburn, wooded	Poorly suited Depth to bedrock Slope	---	---
326:			
Ucross, wooded	Poorly suited Depth to bedrock Slope	---	---
Iwait, wooded	Moderately well suited Seepage	---	---
Fairburn, wooded	Poorly suited Depth to bedrock Slope	---	---
327:			
Ulm	Well suited	Moderately well suited Low precipitation	Moderately well suited Low precipitation
Bidman	Well suited	Moderately well suited Low precipitation	Moderately well suited Low precipitation
328:			
Ulm	Well suited	Moderately well suited Low precipitation	Moderately well suited Low precipitation
329:			
Ulm	Well suited	Moderately well suited Low precipitation	Moderately well suited Low precipitation
330:			
Ulm	Moderately suited Slope	Moderately suited Water erosion	Moderately well suited Low precipitation

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
331:			
Valent	Poorly suited Seepage	Moderately well suited Water erosion	Poorly suited Sandy surface
Duneland	Poorly suited Seepage	Moderately suited Water erosion Too alkaline Salinity	Poorly suited Sandy surface Too alkaline Salinity
332:			
Vanstel	Moderately well suited Seepage	Well suited	Well suited
Pinehill	Well suited	Well suited	Well suited
333:			
Vonalee	Poorly suited Seepage	Moderately well suited Wind erosion Water erosion Low precipitation	Moderately suited Sandy surface
Terro	Poorly suited Depth to bedrock	Moderately well suited Wind erosion Water erosion Low precipitation	Moderately suited Sandy surface
Taluce	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Depth to bedrock Slope	Poorly suited Depth to bedrock Slope
334:			
Vonalf	Poorly suited Seepage	Moderately well suited Wind erosion Water erosion	Moderately suited Sandy surface
Xema	Poorly suited Depth to bedrock	Moderately well suited Wind erosion Water erosion	Moderately suited Sandy surface
Mittenbutte	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Depth to bedrock Slope	Poorly suited Depth to bedrock Slope
335:			
Wibaux	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
Shingle	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
Taluce	Poorly suited Depth to bedrock Slope	Poorly suited Water erosion Slope	Poorly suited Slope Depth to bedrock
336:			
Wibaux, wooded	Poorly suited Depth to bedrock Slope	---	---

Suitability of Soils for Rangeland Practices--Continued

Map symbol and soil name	Rangeland practices		
	Stockwater Ponds	Range Seeding	Range Renovation
336:(cont.)			
Shingle, wooded	Poorly suited Depth to bedrock Slope	---	---
Taluce, wooded	Poorly suited Depth to bedrock Slope	---	---
337:			
Winler	Well suited	Well suited	Well suited
Twotop	Well suited	Well suited	Well suited
338:			
Zigweid	Moderately well suited Seepage	Moderately well suited Low precipitation	Moderately well suited Low precipitation
Cambria	Moderately well suited Seepage	Moderately well suited Low precipitation	Moderately well suited Low precipitation
339:			
Zigweid	Moderately well suited Seepage	Moderately suited Water erosion Slope	Moderately suited Slope
Kishona	Moderately well suited Seepage	Moderately suited Water erosion Slope	Moderately suited Slope
Cambria	Moderately well suited Seepage	Moderately suited Water erosion Slope	Moderately suited Slope

Forestland Productivity

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
259:				
Bonfri, wooded	ponderosa pine	45	34	ponderosa pine
Twilight, wooded	ponderosa pine	45	34	ponderosa pine
Blacksheep, wooded	ponderosa pine	45	34	ponderosa pine
260:				
Cabbart, wooded	ponderosa pine	45	34	ponderosa pine
Volborg, wooded	ponderosa pine	45	34	ponderosa pine
Badland	---	---	---	---
273:				
Delpoint, wooded	ponderosa pine	40	30	ponderosa pine
Yamacall, wooded	ponderosa pine	40	30	ponderosa pine
Cabbart, wooded	ponderosa pine	40	30	ponderosa pine
276:				
Elwop, wooded	ponderosa pine	45	34	ponderosa pine
Mittenbutte, wooded	ponderosa pine	45	---	---
Rock outcrop	---	---	---	---
279:				
Fairburn, wooded	ponderosa pine	45	34	ponderosa pine
Samsil, wooded	ponderosa pine	45	34	ponderosa pine
Badland	---	---	---	---
283:				
Gateson, wooded	ponderosa pine	45	34	ponderosa pine
Xema, wooded	ponderosa pine	45	34	ponderosa pine
Mittenbutte, wooded	ponderosa pine	45	34	ponderosa pine
291:				
Ironbutte, wooded	ponderosa pine	45	---	ponderosa pine
Fairburn, wooded	ponderosa pine	45	---	---
Mittenbutte, wooded	ponderosa pine	45	---	---
294:				
Kirby, wooded	ponderosa pine	45	34	ponderosa pine
Cabbart, wooded	ponderosa pine	45	34	ponderosa pine
Blacksheep, wooded	ponderosa pine	45	34	ponderosa pine
297:				
Muleherder, wooded	ponderosa pine	45	---	ponderosa pine
Ironbutte, wooded	ponderosa pine	45	---	ponderosa pine

Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
316:				
Shingle, wooded	ponderosa pine	40	30	ponderosa pine
Taluce, wooded	ponderosa pine	40	30	ponderosa pine
Badland	---	---	---	---
325:				
Ucross, wooded	ponderosa pine	45	---	ponderosa pine
Fairburn, wooded	ponderosa pine	45	---	ponderosa pine
326:				
Ucross, wooded	ponderosa pine	45	34	ponderosa pine
Iwait, wooded	ponderosa pine	45	34	ponderosa pine
Fairburn, wooded	ponderosa pine	45	34	ponderosa pine
336:				
Wibaux, wooded	ponderosa pine	40	30	ponderosa pine
Shingle, wooded	ponderosa pine	40	30	ponderosa pine
Taluce, wooded	ponderosa pine	40	30	ponderosa pine

Camp Areas, Picnic Areas, and Playgrounds

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
103:							
Arwite	85	Not limited		Not limited		Not limited	
105:							
Arwite	50	Not limited		Not limited		Not limited	
Elwop	30	Not limited		Not limited		Somewhat limited	
						Slope	0.12
						Depth to bedrock	0.10
106:							
Arwite	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Elwop	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Depth to bedrock	0.10
107:							
Arwite	45	Not limited		Not limited		Not limited	
Vonalf	35	Not limited		Not limited		Not limited	
122:							
Cushman	50	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Dusty	0.50
						Depth to bedrock	0.46
Cambria	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50
131:							
Deekay	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
132:							
Deekay	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Moorhead	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
133:							
Deekay	45	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50
Moorhead	40	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134:							
Deekay--------------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Oldwolf-------------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Depth to bedrock	0.29
						Slope	0.12
135:							
Deekay--------------	50	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50
Oldwolf-------------	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Dusty	0.50
						Depth to bedrock	0.29
136:							
Deekay--------------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Ziggy---------------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
137:							
Echeta--------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
138:							
Echeta--------------	45	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Slope	1.00
		Slope	0.04	Slope	0.04	Restricted permeability	0.41
Cromack-------------	35	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Slope	1.00
						Depth to bedrock	0.54
		Slope	0.37	Slope	0.37	Restricted permeability	0.41
144:							
Forkwood------------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
146:							
Forkwood------------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Cushman-------------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Depth to bedrock	0.46
						Slope	0.12

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
147:							
Forkwood------------	50	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50
Cushman-------------	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Dusty	0.50
						Depth to bedrock	0.46
148:							
Forkwood------------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Ulm-----------------	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
149:							
Forkwood------------	55	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50
Ulm-----------------	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Restricted permeability	0.41	Restricted permeability	0.41	Dusty	0.50
		Slope	0.04	Slope	0.04	Rrestricted permeability	0.41
151:							
Haverdad------------	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Dusty	0.50	Flooding	0.60
		Dusty	0.50			Dusty	0.50
155:							
Heldt, saline-------	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Bidman, saline------	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
162:							
Lismas--------------	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Restricted permeability	0.45	Restricted permeability	0.45	Restricted permeability	0.45
Mittenbutte, cool---	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
162:(cont.)							
Sabatka-------------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.41	Restricted permeability	0.41	Depth to bedrock	0.46
						Restricted permeability	0.41
164:							
Lismas--------------	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.45	Restricted permeability	0.45	Restricted permeability	0.45
Sabatka-------------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.41	Restricted permeability	0.41	Depth to bedrock	0.46
						Restricted permeability	0.41
Badland-------------	10	Not rated		Not rated		Not rated	
166:							
Jaywest-------------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
167:							
Jaywest-------------	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Moorhead------------	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
168:							
Jaywest-------------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Spottedhorse--------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
						Slope	0.12
						Depth to bedrock	0.10
170:							
Keeline-------------	40	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.50	Too sandy	0.50	Slope	1.00
		Slope	0.16	Slope	0.16	Too sandy	0.50
Tullock-------------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.50	Too sandy	0.50	Depth to bedrock	0.65
						Too sandy	0.50

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
174:							
Brislawn	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
						Slope	0.12
Rockybutte	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Slope	0.12
Ironbutte	20	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Gravel content	1.00
		Gravel content	0.06	Gravel content	0.06	Slope	0.88
						Dusty	0.50
176:							
Leiter	50	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Slope	1.00
						Restricted permeability	0.41
						Depth to bedrock	0.20
Cromack	30	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Slope	1.00
						Depth to bedrock	0.54
						Restricted permeability	0.41
181:							
Moorhead	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
182:							
Moorhead	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
183:							
Moorhead	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Leiter	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
						Depth to bedrock	0.20
						Slope	0.12
184:							
Moorhead	45	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Slope	1.00
		Slope	0.04	Slope	0.04	Restricted permeability	0.41

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
184:(cont.)							
Leiter	35	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Slope	1.00
		Slope	0.37	Slope	0.37	Restricted permeability	0.41
						Depth to bedrock	0.20
185:							
Moskee	85	Not limited		Not limited		Not limited	
187:							
Nuncho	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
191:							
Pits	60	Not rated		Not rated		Not rated	
Dumps	40	Not rated		Not rated		Not rated	
192:							
Platmak	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
198:							
Recluse	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
203:							
Rockypoint	45	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Dusty	0.50	Flooding	0.60
		Dusty	0.50			Dusty	0.50
Iwait	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Slope	0.12
204:							
Samday	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Samday, cool	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Shingle	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
206:							
Samday	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Shingle	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Badland	15	Not rated		Not rated		Not rated	
207:							
Cromack	30	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to bedrock	0.54
						Restricted permeability	0.41
Fairburn	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Ucross	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Depth to bedrock	0.35
210:							
Shingle	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Taluce	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
215:							
Theedle	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.44	Restricted permeability	0.44	Restricted permeability	0.44
						Depth to bedrock	0.06
Kishona	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50
216:							
Theedle	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.65
						Dusty	0.50

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
216:(cont.)							
Kishona	20	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50
Shingle	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
217:							
Theedle	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.65
						Dusty	0.50
Shingle	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
219:							
Torriarents	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
Torriorthents	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
220:							
Pitchdraw	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.35
Ashollow	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Niobrara	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.88	Too sandy	0.88	Too sandy	0.88
221:							
Turnercrest	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.29
Keeline	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
Taluce	15	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
223:							
Ucross	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.88
						Dusty	0.50
						Depth to bedrock	0.35

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
224:							
Ucross--------------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Depth to bedrock	0.35
						Slope	0.12
Iwait---------------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
225:							
Ucross--------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Depth to bedrock	0.35
Iwait---------------	25	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50
Fairburn------------	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
228:							
Ulm-----------------	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Renohill------------	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
						Slope	0.12
						Depth to bedrock	0.10
229:							
Ulm-----------------	45	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Slope	1.00
						Restricted permeability	0.41
Renohill------------	35	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Slope	1.00
		Slope	0.37	Slope	0.37	Restricted permeability	0.41
						Depth to bedrock	0.10
233:							
Ustic Torriorthents, gullied------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Depth to bedrock	0.10
234:							
Ustic Torriorthents-	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Depth to bedrock	0.10

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
234:(cont.)							
Badland-------------	20	Not rated		Not rated		Not rated	
236:							
Vonalee-------------	50	Not limited		Not limited		Somewhat limited	
						Slope	0.50
Terro---------------	30	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.46
238:							
Vonalf--------------	50	Not limited		Not limited		Somewhat limited	
						Slope	0.50
Xema----------------	30	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.35
239:							
Ironbutte-----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Gravel content	1.00
		Gravel content	0.06	Gravel content	0.06	Dusty	0.50
Fairburn------------	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Mittenbutte---------	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
241:							
Ironbutte-----------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Gravel content	1.00
		Gravel content	0.06	Gravel content	0.06	Dusty	0.50
Ironbutte, thin solum--------------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Gravel content	1.00
		Gravel content	0.06	Gravel content	0.06	Dusty	0.50
244:							
Muleherder----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Too stony	0.47	Too stony	0.47	Dusty	0.50
		Gravel content	0.01	Gravel content	0.01	Too stony	0.47
Ironbutte-----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Too stony	0.47	Too stony	0.47	Dusty	0.50
		Gravel content	0.06	Gravel content	0.06	Too stony	0.47

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
248:							
Ziggy	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Iwait	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
249:							
Ziggy	50	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
						Dusty	0.50
Iwait	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
						Dusty	0.50
250:							
Ziggy	35	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
						Dusty	0.50
Ucross	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Dusty	0.50
						Depth to bedrock	0.35
Oldwolf	20	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Dusty	0.50
						Depth to bedrock	0.29
251:							
Water	100	Not rated		Not rated		Not rated	
252:							
Absted	45	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
						Slope	0.12
Slickspots	35	Not rated		Not rated		Not rated	
253:							
Absted	30	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
Arvada	30	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
Slickspots	20	Not rated		Not rated		Not rated	
254:							
Badland	50	Not rated		Not rated		Not rated	

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
254:(cont.)							
Lismas	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Restricted permeability	0.45	Restricted permeability	0.45	Restricted permeability	0.45
255:							
Bidman	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Parmleed	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
						Slope	0.12
						Depth to bedrock	0.03
256:							
Bidman	55	Not limited		Not limited		Somewhat limited	
						Slope	0.12
Ulm	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Slope	0.12
257:							
Bonfri, deep	50	Not limited		Not limited		Not limited	
Bonfri	30	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
						Slope	0.12
258:							
Bonfri	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Depth to bedrock	0.29
						Slope	0.12
Kirby	35	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Gravel content	1.00
		Gravel content	0.08	Gravel content	0.08	Slope	0.88
						Dusty	0.50
259:							
Bonfri	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
						Depth to bedrock	0.46
Twilight	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.54
Blacksheep	15	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
260:							
Cabbart, wooded-----	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Volborg, wooded-----	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Badland-------------	15	Not rated		Not rated		Not rated	
261:							
Cabbart-------------	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Yawdim--------------	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Badland-------------	15	Not rated		Not rated		Not rated	
262:							
Cambria-------------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Kishona-------------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Zigweid-------------	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
263:							
Cedar Butte---------	65	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Slickspots----------	20	Not rated		Not rated		Not rated	
264:							
Clarkelen-----------	50	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Draknab-------------	40	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
265:							
Clarkelen-----------	45	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Draknab-------------	35	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
265:(cont.)							
Boruff--------------	15	Very limited Depth to saturated zone Flooding Too clayey Restricted permeability	 1.00 1.00 1.00 0.96	Very limited Depth to saturated zone Too clayey Restricted permeability	 1.00 1.00 0.96	Very limited Depth to saturated zone Too clayey Restricted permeability Flooding	 1.00 1.00 0.96 0.60
266:							
Coaliams, moderately saline------------	90	Very limited Flooding Dusty	 1.00 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50
267:							
Cromack-------------	45	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Very limited Slope Depth to bedrock Restricted permeability	 1.00 0.54 0.41
Samsil--------------	35	Very limited Depth to bedrock Restricted permeability	 1.00 0.41	Very limited Depth to bedrock Restricted permeability	 1.00 0.41	Very limited Depth to bedrock Slope Restricted permeability	 1.00 1.00 0.41
268:							
Decolney------------	45	Not limited		Not limited		Not limited	
Hiland--------------	40	Not limited		Not limited		Not limited	
269:							
Decolney------------	40	Somewhat limited Slope	 0.04	Somewhat limited Slope	 0.04	Very limited Slope	 1.00
Hiland--------------	40	Somewhat limited Slope	 0.04	Somewhat limited Slope	 0.04	Very limited Slope	 1.00
270:							
Deekay--------------	40	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50
Deekay, stratified substratum---------	40	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50
271:							
Delpoint------------	45	Very limited Slope Dusty	 1.00 0.50	Very limited Slope Dusty	 1.00 0.50	Very limited Slope Dusty Depth to bedrock	 1.00 0.50 0.20
Cabbart-------------	35	Very limited Depth to bedrock Slope Dusty	 1.00 1.00 0.50	Very limited Depth to bedrock Slope Dusty	 1.00 1.00 0.50	Very limited Slope Depth to bedrock Dusty	 1.00 1.00 0.50

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
272:							
Delpoint------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Depth to bedrock	0.20
Yamacall------------	25	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.16	Slope	0.16	Dusty	0.50
Cabbart-------------	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
273:							
Delpoint, wooded----	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.16
Yamacall, wooded----	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
Cabbart, wooded-----	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
274:							
Denied access-------	100	Not rated		Not rated		Not rated	
275:							
Echeta--------------	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Moorhead------------	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
276:							
Elwop, wooded-------	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
						Depth to bedrock	0.10
Mittenbutte, wooded-	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	
277:							
Fairburn------------	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Mittenbutte---------	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
277:(cont.)							
Badland	15	Not rated		Not rated		Not rated	
278:							
Fairburn	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Samsil	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Badland	15	Not rated		Not rated		Not rated	
279:							
Fairburn, wooded	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
Samsil, wooded	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Badland	15	Not rated		Not rated		Not rated	
280:							
Felix	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Too clayey	0.50	Too clayey	0.50	Too clayey	0.50
		Restricted permeability	0.45	Restricted permeability	0.45	Restricted permeability	0.45
281:							
Foreleft	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
282:							
Foreleft	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.88
						Dusty	0.50
Bonfri	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
						Dusty	0.50
						Depth to bedrock	0.29
283:							
Gateson, wooded	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.03

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
283:(cont.)							
Xema, wooded	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.01
Mittenbutte, wooded	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
284:							
Haverdad	85	Very limited		Not limited		Not limited	
		Flooding	1.00				
285:							
Haverdad	50	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Dusty	0.50	Flooding	0.60
		Dusty	0.50			Dusty	0.50
Boruff	40	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Too clayey	1.00	Too clayey	1.00
		Too clayey	1.00	Restricted permeability	0.96	Restricted permeability	0.96
		Rrestricted permeability	0.96			Flooding	0.60
286:							
Havre	50	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Dusty	0.50	Flooding	0.60
		Dusty	0.50			Dusty	0.50
Bigsandy	35	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00			Flooding	0.60
287:							
Hiland	45	Not limited		Not limited		Very limited	
						Slope	1.00
Bowbac	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
						Depth to bedrock	0.90
288:							
Hiland	50	Not limited		Not limited		Not limited	
Bowbac	30	Not limited		Not limited		Somewhat limited	
						Slope	0.12
						Depth to bedrock	0.01
289:							
Hiland	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Bowbac	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Depth to bedrock	0.01

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
290:							
Hiland	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Decolney	35	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.50	Too sandy	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Too sandy	0.50
291:							
Ironbutte, wooded	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Fairburn, wooded	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Mittenbutte, wooded	15	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
292:							
Jaywest	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Jaywest, stratified substratum	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
293:							
Jaywest, saline substratum	40	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Cedar Butte	30	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Slickspots	15	Not rated		Not rated		Not rated	
294:							
Kirby, wooded	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Cabbart, wooded	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
Blacksheep, wooded	15	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
295:							
Lismas	40	Very limited Depth to bedrock Restricted permeability Slope	 1.00 0.45 0.16	Very limited Depth to bedrock Restricted permeability Slope	 1.00 0.45 0.16	Very limited Depth to bedrock Slope Restricted permeability	 1.00 1.00 0.45
Sabatka	30	Somewhat limited Restricted permeability Slope	 0.41 0.16	Somewhat limited Restricted permeability Slope	 0.41 0.16	Very limited Slope Depth to bedrock Restricted permeability	 1.00 0.46 0.41
Xema	15	Not limited		Not limited		Very limited Slope Depth to bedrock	 1.00 0.20
296:							
Megonot	50	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Very limited Slope Restricted permeability Depth to bedrock	 1.00 0.41 0.20
Yawdim	35	Very limited Depth to bedrock Restricted permeability Slope	 1.00 0.41 0.16	Very limited Depth to bedrock Restricted permeability Slope	 1.00 0.41 0.16	Very limited Depth to bedrock Slope Restricted permeability	 1.00 1.00 0.41
297:							
Muleherder, wooded	45	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
Ironbutte, wooded	40	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
298:							
Nuncho	85	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41
299:							
Oldwolf	50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Very limited Slope Dusty Depth to bedrock	 1.00 0.50 0.29
Fairburn	30	Very limited Depth to bedrock Dusty	 1.00 0.50	Very limited Depth to bedrock Dusty	 1.00 0.50	Very limited Depth to bedrock Slope Dusty	 1.00 1.00 0.50
300:							
Oshoto	50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
300:(cont.)							
Klinedraw-----------	35	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty Depth to bedrock Slope	 0.50 0.29 0.12
301:							
Oshoto--------------	45	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Very limited Slope Dusty	 1.00 0.50
Klinedraw-----------	35	Somewhat limited Dusty Slope	 0.50 0.16	Somewhat limited Dusty Slope	 0.50 0.16	Very limited Slope Dusty Depth to bedrock	 1.00 0.50 0.29
302:							
Oshoto--------------	50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50
Moorhead------------	30	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41
303:							
Oshoto--------------	50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50
Ziggy---------------	35	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50
304:							
Parmleed------------	40	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Very limited Slope Depth to bedrock Restricted permeability	 1.00 0.46 0.41
Bidman--------------	30	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Somewhat limited Slope Restricted permeability	 0.50 0.41
305:							
Pinehill------------	85	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41
306:							
Pinehill------------	50	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Somewhat limited Slope Restricted permeability	 0.88 0.41
Pylon---------------	35	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Very limited Slope Depth to bedrock Restricted permeability	 1.00 0.46 0.41

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
307:							
Pinehill, loam------	45	Somewhat limited Dusty Restricted permeability	 0.50 0.41	Somewhat limited Dusty Restricted permeability	 0.50 0.41	Somewhat limited Dusty Restricted permeability	 0.50 0.41
Pinehill, clay loam-	40	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41
308:							
Pinehill------------	45	Somewhat limited Dusty Restricted permeability	 0.50 0.41	Somewhat limited Dusty Restricted permeability	 0.50 0.41	Somewhat limited Slope Dusty Restricted permeability	 0.88 0.50 0.41
Pylon---------------	35	Somewhat limited Dusty Restricted permeability	 0.50 0.41	Somewhat limited Dusty Restricted permeability	 0.50 0.41	Very limited Slope Dusty Restricted permeability Depth to bedrock	 1.00 0.50 0.41 0.16
309:							
Pitchdraw-----------	40	Somewhat limited Slope	 0.16	Somewhat limited Slope	 0.16	Very limited Slope Depth to bedrock	 1.00 0.35
Ashollow------------	25	Somewhat limited Slope	 0.04	Somewhat limited Slope	 0.04	Very limited Slope	 1.00
Mittenbutte---------	15	Very limited Depth to bedrock Slope	 1.00 0.63	Very limited Depth to bedrock Slope	 1.00 0.63	Very limited Depth to bedrock Slope	 1.00 1.00
310:							
Rockypoint----------	80	Very limited Flooding Dusty	 1.00 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Flooding Dusty	 0.60 0.50
311:							
Rockypoint----------	50	Very limited Flooding Dusty	 1.00 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Flooding Dusty	 0.60 0.50
Boruff--------------	40	Very limited Depth to saturated zone Flooding Too clayey Restricted permeability	 1.00 1.00 1.00 0.96	Very limited Depth to saturated zone Too clayey Restricted permeability	 1.00 1.00 0.96	Very limited Depth to saturated zone Too clayey Restricted permeability Flooding	 1.00 1.00 0.96 0.60
312:							
Rockypoint----------	50	Very limited Flooding Dusty	 1.00 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Flooding Dusty	 0.60 0.50

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
312:(cont.)							
Sodawells	40	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
313:							
Savageton	45	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Slope	1.00
						Depth to bedrock	0.54
						Restricted permeability	0.41
Samday	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Restricted permeability	0.41	Restricted permeability	0.41	Slope	1.00
						Restricted permeability	0.41
314:							
Savageton	45	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.44	Restricted permeability	0.44	Slope	1.00
		Slope	0.37	Slope	0.37	Restricted permeability	0.44
						Depth to bedrock	0.35
Silhouette	35	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Slope	1.00
						Restricted permeability	0.41
315:							
Shingle	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Taluce	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
Badland	15	Not rated		Not rated		Not rated	
316:							
Shingle, wooded	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
Taluce, wooded	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
Badland	15	Not rated		Not rated		Not rated	
317:							
Silhouette	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
317:(cont.)							
Ulm	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
318:							
Sodawells	45	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Pathfinder	30	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Boruff	15	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Too clayey	1.00	Too clayey	1.00
		Too clayey	1.00	Restricted permeability	0.96	Restricted permeability	0.96
		Restricted permeability	0.96			Flooding	0.60
319:							
Spottedhorse	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
						Slope	0.12
						Depth to bedrock	0.10
Leiter	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
						Depth to bedrock	0.20
						Slope	0.12
320:							
Stetter	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Too clayey	0.50	Flooding	0.60
		Too clayey	0.50	Restricted permeability	0.41	Too clayey	0.50
		Restricted permeability	0.41			Restricted permeability	0.41
321:							
Swanboy	35	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Too clayey	0.50	Too clayey	0.50	Too clayey	0.50
		Restricted permeability	0.45	Restricted permeability	0.45	Restricted permeability	0.45
Cedar Butte	30	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41
Slickspots	15	Not rated		Not rated		Not rated	
322:							
Toby	40	Not limited		Not limited		Very limited	
						Slope	1.00

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
322:(cont.)							
Twilight------------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.54
Blacksheep----------	15	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
323:							
Ucross--------------	45	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Dusty	0.50
						Depth to bedrock	0.35
Fairburn------------	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Dusty	0.50
324:							
Ucross--------------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Depth to bedrock	0.35
Fairburn------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
325:							
Ucross, wooded------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.29
Fairburn, wooded----	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
326:							
Ucross, wooded------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.32
Iwait, wooded-------	25	Not limited		Not limited		Very limited	
						Slope	1.00
Fairburn, wooded----	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
327:							
Ulm-----------------	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.41	Restricted permeability	0.41	Restricted permeability	0.41

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
327:(cont.)							
Bidman	40	Somewhat limited Dusty Restricted permeability	 0.50 0.41	Somewhat limited Dusty Restricted permeability	 0.50 0.41	Somewhat limited Dusty Restricted permeability	 0.50 0.41
328:							
Ulm	80	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41
329:							
Ulm	90	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Somewhat limited Slope Restricted permeability	 0.50 0.41
330:							
Ulm	85	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Very limited Slope Restricted permeability	 1.00 0.41
331:							
Valent	60	Somewhat limited Too sandy	 0.68	Somewhat limited Too sandy	 0.68	Very limited Slope Too sandy	 1.00 0.68
Duneland	35	Not rated		Not rated		Not rated	
332:							
Vanstel	50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50
Pinehill	35	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41	Somewhat limited Restricted permeability	 0.41
333:							
Vonalee	40	Not limited		Not limited		Very limited Slope	 1.00
Terro	25	Somewhat limited Slope	 0.37	Somewhat limited Slope	 0.37	Very limited Slope Depth to bedrock	 1.00 0.46
Taluce	15	Very limited Depth to bedrock Slope	 1.00 1.00	Very limited Depth to bedrock Slope	 1.00 1.00	Very limited Depth to bedrock Slope	 1.00 1.00
334:							
Vonalf	40	Not limited		Not limited		Very limited Slope	 1.00
Xema	25	Somewhat limited Slope	 0.37	Somewhat limited Slope	 0.37	Very limited Slope Depth to bedrock	 1.00 0.35

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
334:(cont.)							
Mittenbutte---------	15	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
335:							
Wibaux--------------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Gravel content	1.00
		Gravel content	0.08	Gravel content	0.08	Dusty	0.50
Shingle-------------	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Taluce--------------	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
336:							
Wibaux, wooded------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Shingle, wooded-----	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
Taluce, wooded------	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
337:							
Winler--------------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Too clayey	0.50	Too clayey	0.50
		Restricted permeability	0.45	Restricted permeability	0.45	Restricted permeability	0.45
						Depth to bedrock	0.29
						Slope	0.12
Twotop--------------	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Too clayey	0.50	Too clayey	0.50
		Restricted permeability	0.45	Restricted permeability	0.45	Restricted permeability	0.45
338:							
Zigweid-------------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Slope	0.12
Cambria-------------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Slope	0.12
339:							
Zigweid-------------	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.26	Slope	0.26	Slope	1.00

Camp Areas, Picnic Areas, and Playgrounds--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
339:(cont.)							
Kishona-------------	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.26	Slope	0.26	Dusty	0.50
Cambria-------------	25	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.26	Slope	0.26	Dusty	0.50

Trails and Golf Fairways

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
103:							
Arwite	85	Not limited		Not limited		Not limited	
105:							
Arwite	50	Not limited		Not limited		Not limited	
Elwop	30	Not limited		Not limited		Somewhat limited Depth to bedrock	 0.10
106:							
Arwite	45	Not limited		Not limited		Somewhat limited Slope	 0.04
Elwop	35	Not limited		Not limited		Somewhat limited Slope Depth to bedrock	 0.37 0.10
107:							
Arwite	45	Not limited		Not limited		Not limited	
Vonalf	35	Not limited		Not limited		Not limited	
122:							
Cushman	50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Depth to bedrock Slope	 0.46 0.37
Cambria	30	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Slope	 0.04
131:							
Deekay	80	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Not limited	
132:							
Deekay	50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Not limited	
Moorhead	35	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Not limited	
133:							
Deekay	45	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Slope	 0.04
Moorhead	40	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Slope	 0.04
134:							
Deekay	50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Not limited	

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134:(cont.)							
Oldwolf	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.29
135:							
Deekay	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.04
Oldwolf	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.37
						Depth to bedrock	0.29
136:							
Deekay	50	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Ziggy	30	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
137:							
Echeta	85	Not limited		Not limited		Not limited	
138:							
Echeta	45	Not limited		Not limited		Somewhat limited	
						Slope	0.04
Cromack	35	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
						Slope	0.37
144:							
Forkwood	80	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
146:							
Forkwood	50	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Cushman	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.46
147:							
Forkwood	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.04
Cushman	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.46
						Slope	0.37
148:							
Forkwood	50	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Ulm	35	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
149:							
Forkwood	55	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.04

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
149:(cont.)							
Ulm	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.04
151:							
Haverdad	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Flooding	0.60
155:							
Heldt, saline	45	Not limited		Not limited		Not limited	
Bidman, saline	35	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
162:							
Lismas	30	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Depth to bedrock	1.00
		Slope	0.50			Slope	1.00
						Droughty	0.83
Mittenbutte, cool	30	Somewhat limited		Not limited		Very limited	
		Slope	0.92			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.84
Sabatka	20	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.18			Depth to bedrock	0.46
164:							
Lismas	35	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Depth to bedrock	1.00
		Slope	0.50			Slope	1.00
						Droughty	0.83
Sabatka	30	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.08			Depth to bedrock	0.46
Badland	10	Not rated		Not rated		Not rated	
166:							
Jaywest	80	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
167:							
Jaywest	40	Not limited		Not limited		Not limited	
Moorhead	40	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
168:							
Jaywest	50	Not limited		Not limited		Not limited	
Spottedhorse	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.10

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
170:							
Keeline	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.50	Too sandy	0.50	Slope	0.16
Tullock	40	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.50	Too sandy	0.50	Droughty	1.00
						Slope	1.00
						Depth to bedrock	0.65
174:							
Brislawn	30	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Rockybutte	30	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Ironbutte	20	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Droughty	1.00
						Gravel content	0.06
176:							
Leiter	50	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.20
Cromack	30	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
181:							
Moorhead	80	Not limited		Not limited		Not limited	
182:							
Moorhead	85	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
183:							
Moorhead	50	Not limited		Not limited		Not limited	
Leiter	30	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.20
184:							
Moorhead	45	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
Leiter	35	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.37
						Depth to bedrock	0.20
185:							
Moskee	85	Not limited		Not limited		Not limited	
187:							
Nuncho	80	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
191:							
Pits	60	Not rated		Not rated		Not rated	
Dumps	40	Not rated		Not rated		Not rated	

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
192:							
Platmak	80	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
198:							
Recluse	80	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
203:							
Rockypoint	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Flooding	0.60
Iwait	35	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
204:							
Samday	30	Somewhat limited		Not limited		Very limited	
		Slope	0.92			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.86
Samday, cool	25	Somewhat limited		Not limited		Very limited	
		Slope	0.92			Depth to bedrock	1.00
						Droughty	1.00
						Slope	1.00
Shingle	20	Somewhat limited		Not limited		Very limited	
		Slope	0.92			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.28
206:							
Samday	35	Very limited		Not limited		Very limited	
		Slope	1.00			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.86
Shingle	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Dusty	0.50	Depth to bedrock	1.00
		Dusty	0.50			Slope	1.00
						Droughty	0.99
Badland	15	Not rated		Not rated		Not rated	
207:							
Cromack	30	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
						Slope	0.04
Fairburn	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	1.00
						Droughty	0.83
						Slope	0.63
Ucross	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.63
						Depth to bedrock	0.35

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
210:							
Shingle--------------	40	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	1.00
		Slope	0.08			Slope	1.00
						Droughty	0.99
Taluce---------------	40	Somewhat limited		Not limited		Very limited	
		Slope	0.08			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.84
215:							
Theedle--------------	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.84
						Depth to bedrock	0.06
Kishona--------------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.04
216:							
Theedle--------------	40	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.08			Depth to bedrock	0.65
Kishona--------------	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.04
Shingle--------------	20	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	1.00
		Slope	0.18			Slope	1.00
						Droughty	0.99
217:							
Theedle--------------	50	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.08			Depth to bedrock	0.65
Shingle--------------	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	1.00
		Slope	0.08			Slope	1.00
						Droughty	0.99
219:							
Torriarents----------	50	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.16
Torriorthents--------	50	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.16
220:							
Pitchdraw------------	35	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.35
Ashollow-------------	25	Not limited		Not limited		Somewhat limited	
						Slope	0.04

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
220:(cont.)							
Niobrara------------	20	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.88	Too sandy	0.88	Depth to bedrock	1.00
		Slope	0.50			Droughty	1.00
						Slope	1.00
221:							
Turnercrest---------	35	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.29
Keeline-------------	30	Not limited		Not limited		Somewhat limited	
						Slope	0.16
Taluce--------------	15	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.99
223:							
Ucross--------------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.35
224:							
Ucross--------------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.35
Iwait---------------	30	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
225:							
Ucross--------------	35	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
						Depth to bedrock	0.35
Iwait---------------	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.04
Fairburn------------	20	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	1.00
		Slope	0.18			Slope	1.00
						Droughty	0.83
228:							
Ulm-----------------	45	Not limited		Not limited		Not limited	
Renohill------------	40	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.10
229:							
Ulm-----------------	45	Not limited		Not limited		Not limited	
Renohill------------	35	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.37
						Depth to bedrock	0.10

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
233:							
Ustic Torriorthents, gullied	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.98	Dusty	0.50	Slope	1.00
		Dusty	0.50			Depth to bedrock	0.10
234:							
Ustic Torriorthents	65	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Dusty	0.50	Slope	1.00
		Dusty	0.50			Depth to bedrock	0.10
Badland	20	Not rated		Not rated		Not rated	
236:							
Vonalee	50	Not limited		Not limited		Not limited	
Terro	30	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.46
238:							
Vonalf	50	Not limited		Not limited		Not limited	
Xema	30	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.35
239:							
Ironbutte	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.92	Dusty	0.50	Droughty	1.00
		Dusty	0.50			Slope	1.00
						Gravel content	0.06
Fairburn	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.92	Dusty	0.50	Depth to bedrock	1.00
		Dusty	0.50			Slope	1.00
						Droughty	0.83
Mittenbutte	25	Somewhat limited		Not limited		Very limited	
		Slope	0.92			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.96
241:							
Ironbutte	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.92	Dusty	0.50	Droughty	1.00
		Dusty	0.50			Slope	1.00
						Gravel content	0.06
Ironbutte, thin solum	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.92	Dusty	0.50	Droughty	1.00
		Dusty	0.50			Slope	1.00
						Gravel content	0.06
244:							
Muleherder	45	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Too stony	0.47	Too stony	0.47	Droughty	0.29
		Slope	0.08			Gravel content	0.01

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
244:(cont.)							
Ironbutte	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.92	Dusty	0.50	Droughty	1.00
		Dusty	0.50	Too stony	0.47	Slope	1.00
		Too stony	0.47			Gravel content	0.06
248:							
Ziggy	50	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Iwait	30	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
249:							
Ziggy	50	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Iwait	30	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
250:							
Ziggy	35	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Ucross	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.37
						Depth to bedrock	0.35
Oldwolf	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.37
						Depth to bedrock	0.29
251:							
Water	100	Not rated		Not rated		Not rated	
252:							
Absted	45	Not limited		Not limited		Very limited	
						Sodium content	1.00
Slickspots	35	Not rated		Not rated		Very limited	
						Salinity	1.00
						Sodium content	1.00
						Droughty	0.01
253:							
Absted	30	Not limited		Not limited		Very limited	
						Sodium content	1.00
Arvada	30	Not limited		Not limited		Very limited	
						Sodium content	1.00
Slickspots	20	Not rated		Not rated		Very limited	
						Salinity	1.00
						Sodium content	1.00
						Droughty	0.01
254:							
Badland	50	Not rated		Not rated		Not rated	

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
254:(cont.)							
Lismas--------------	35	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
						Droughty	0.83
255:							
Bidman--------------	45	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Parmleed------------	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.03
256:							
Bidman--------------	55	Not limited		Not limited		Not limited	
Ulm-----------------	35	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
257:							
Bonfri, deep--------	50	Not limited		Not limited		Not limited	
Bonfri--------------	30	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
258:							
Bonfri--------------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.29
Kirby---------------	35	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Droughty	0.99
						Gravel content	0.08
259:							
Bonfri--------------	40	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.46
						Slope	0.16
Twilight------------	30	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.54
						Droughty	0.01
Blacksheep----------	15	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.99
260:							
Cabbart, wooded-----	40	Very limited		Not limited		Very limited	
		Slope	1.00			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.83
Volborg, wooded-----	30	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Depth to bedrock	1.00
		Water erosion	1.00			Slope	1.00
						Droughty	0.93

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
260:(cont.)							
Badland	15	Not rated		Not rated		Not rated	
261:							
Cabbart	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Dusty	0.50	Depth to bedrock	1.00
		Dusty	0.50			Slope	1.00
						Droughty	0.83
Yawdim	30	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.83
Badland	15	Not rated		Not rated		Not rated	
262:							
Cambria	30	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Kishona	30	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Zigweid	25	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
263:							
Cedar Butte	65	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
Slickspots	20	Not rated		Not rated		Very limited	
						Salinity	1.00
						Sodium content	1.00
						Droughty	0.01
264:							
Clarkelen	50	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
Draknab	40	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Droughty	0.02
265:							
Clarkelen	45	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
Draknab	35	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Droughty	0.02
Boruff	15	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
						Flooding	0.60

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
266:							
Coaliams, moderate saline-------------	90	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
267:							
Cromack-------------	45	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
Samsil--------------	35	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	0.89
268:							
Decolney------------	45	Not limited		Not limited		Not limited	
Hiland--------------	40	Not limited		Not limited		Not limited	
269:							
Decolney------------	40	Not limited		Not limited		Somewhat limited	
						Slope	0.04
Hiland--------------	40	Not limited		Not limited		Somewhat limited	
						Slope	0.04
270:							
Deekay--------------	40	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Deekay, stratified substratum---------	40	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
271:							
Delpoint------------	45	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
						Depth to bedrock	0.20
Cabbart-------------	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Dusty	0.50	Depth to bedrock	1.00
		Dusty	0.50			Slope	1.00
						Droughty	0.83
272:							
Delpoint------------	35	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
						Depth to bedrock	0.20
Yamacall------------	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.16
Cabbart-------------	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Dusty	0.50	Depth to bedrock	1.00
		Dusty	0.50			Slope	1.00
						Droughty	0.83

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
273:							
Delpoint, wooded----	35	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.16
Yamacall, wooded----	25	Not limited		Not limited		Somewhat limited	
						Slope	0.16
Cabbart, wooded-----	20	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.83
274:							
Denied access-------	100	Not rated		Not rated		Not rated	
275:							
Echeta--------------	45	Not limited		Not limited		Not limited	
Moorhead------------	40	Not limited		Not limited		Not limited	
276:							
Elwop, wooded-------	35	Not limited		Not limited		Somewhat limited	
						Slope	0.16
						Depth to bedrock	0.10
Mittenbutte, wooded-	35	Very limited		Not limited		Very limited	
		Slope	1.00			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.99
Rock outcrop--------	15	Not rated		Not rated		Not rated	
277:							
Fairburn------------	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Dusty	0.50	Depth to bedrock	1.00
		Dusty	0.50			Slope	1.00
						Droughty	0.83
Mittenbutte---------	25	Very limited		Not limited		Very limited	
		Slope	1.00			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.96
Badland-------------	15	Not rated		Not rated		Not rated	
278:							
Fairburn------------	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Dusty	0.50	Depth to bedrock	1.00
		Dusty	0.50			Slope	1.00
						Droughty	0.83
Samsil--------------	30	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.89
Badland-------------	15	Not rated		Not rated		Not rated	

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
279:							
Fairburn, wooded	35	Somewhat limited		Not limited		Very limited	
		Slope	0.18			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.87
Samsil, wooded	30	Somewhat limited		Not limited		Very limited	
		Slope	0.18			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.96
Badland	15	Not rated		Not rated		Not rated	
280:							
Felix	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Too clayey	0.50	Too clayey	0.50	Ponding	1.00
281:							
Foreleft	80	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
282:							
Foreleft	50	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Bonfri	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.29
283:							
Gateson, wooded	40	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.03
Xema, wooded	25	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.01
Mittenbutte, wooded	20	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Droughty	1.00
						Slope	1.00
284:							
Haverdad	85	Not limited		Not limited		Not limited	
285:							
Haverdad	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Flooding	0.60
Boruff	40	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
						Flooding	0.60

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
286:							
Havre	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Flooding	0.60
Bigsandy	35	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Flooding	0.60
287:							
Hiland	45	Not limited		Not limited		Not limited	
Bowbac	30	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.90
						Slope	0.16
						Droughty	0.16
288:							
Hiland	50	Not limited		Not limited		Not limited	
Bowbac	30	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.01
289:							
Hiland	45	Not limited		Not limited		Somewhat limited	
						Slope	0.04
Bowbac	35	Not limited		Not limited		Somewhat limited	
						Slope	0.37
						Depth to bedrock	0.01
290:							
Hiland	50	Not limited		Not limited		Somewhat limited	
						Slope	0.04
Decolney	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.50	Too sandy	0.50	Slope	0.04
291:							
Ironbutte, wooded	35	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Droughty	1.00
						Slope	1.00
Fairburn, wooded	30	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.83
Mittenbutte, wooded	15	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.99
292:							
Jaywest	45	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
292:(cont.)							
Jaywest, stratified substratum	40	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
293:							
Jaywest, saline substratum	40	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
Cedar Butte	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
Slickspots	15	Not rated		Not rated		Very limited	
						Salinity	1.00
						Sodium content	1.00
						Too clayey	1.00
						Droughty	0.01
294:							
Kirby, wooded	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Droughty	0.99
Cabbart, wooded	25	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.83
Blacksheep, wooded	15	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.99
295:							
Lismas	40	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Depth to bedrock	1.00
						Droughty	0.83
						Slope	0.16
Sabatka	30	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to bedrock	0.46
						Slope	0.16
Xema	15	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.20
296:							
Megonot	50	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.20
Yawdim	35	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	0.83
						Slope	0.16

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297:							
Muleherder, wooded	45	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Droughty	0.33
Ironbutte, wooded	40	Very limited		Not limited		Very limited	
		Slope	1.00			Droughty	1.00
						Slope	1.00
298:							
Nuncho	85	Not limited		Not limited		Not limited	
299:							
Oldwolf	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.29
Fairburn	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	1.00
						Droughty	0.83
300:							
Oshoto	50	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Klinedraw	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.29
301:							
Oshoto	45	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Klinedraw	35	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to bedrock	0.29
		Dusty	0.50	Dusty	0.50	Slope	0.16
302:							
Oshoto	50	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Moorhead	30	Not limited		Not limited		Not limited	
303:							
Oshoto	50	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Ziggy	35	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
304:							
Parmleed	40	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.46
Bidman	30	Not limited		Not limited		Not limited	
305:							
Pinehill	85	Not limited		Not limited		Not limited	

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
306:							
Pinehill	50	Not limited		Not limited		Not limited	
Pylon	35	Not limited		Not limited		Somewhat limited Depth to bedrock	 0.46
307:							
Pinehill, loam	45	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Not limited	
Pinehill, clay loam	40	Not limited		Not limited		Not limited	
308:							
Pinehill	45	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Not limited	
Pylon	35	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Depth to bedrock	 0.16
309:							
Pitchdraw	40	Not limited		Not limited		Somewhat limited Depth to bedrock Slope	 0.35 0.16
Ashollow	25	Not limited		Not limited		Somewhat limited Slope	 0.04
Mittenbutte	15	Not limited		Not limited		Very limited Depth to bedrock Droughty Slope	 1.00 0.96 0.63
310:							
Rockypoint	80	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Flooding	 0.60
311:							
Rockypoint	50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Flooding	 0.60
Boruff	40	Very limited Depth to saturated zone Too clayey	 1.00 1.00	Very limited Depth to saturated zone Too clayey	 1.00 1.00	Very limited Depth to saturated zone Too clayey Flooding	 1.00 1.00 0.60
312:							
Rockypoint	50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Flooding	 0.60
Sodawells	40	Not limited		Not limited		Somewhat limited Flooding	 0.60
313:							
Savageton	45	Not limited		Not limited		Somewhat limited Depth to bedrock	 0.54

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
313:(cont.)							
Samday	35	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	0.85
314:							
Savageton	45	Not limited		Not limited		Somewhat limited	
						Slope	0.37
						Depth to bedrock	0.35
Silhouette	35	Not limited		Not limited		Not limited	
315:							
Shingle	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Dusty	0.50	Depth to bedrock	1.00
		Dusty	0.50			Slope	1.00
						Droughty	0.99
Taluce	25	Very limited		Not limited		Very limited	
		Slope	1.00			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.84
Badland	15	Not rated		Not rated		Not rated	
316:							
Shingle, wooded	40	Very limited		Not limited		Very limited	
		Slope	1.00			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.99
Taluce, wooded	25	Very limited		Not limited		Very limited	
		Slope	1.00			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.87
Badland	15	Not rated		Not rated		Not rated	
317:							
Silhouette	45	Not limited		Not limited		Not limited	
Ulm	35	Not limited		Not limited		Not limited	
318:							
Sodawells	45	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
Pathfinder	30	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Droughty	0.02
Boruff	15	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
						Flooding	0.60

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
319:							
Spottedhorse	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.10
Leiter	35	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.20
320:							
Stetter	85	Somewhat limited		Somewhat limited		Very limited	
		Too clayey	0.50	Too clayey	0.50	Too clayey	1.00
						Flooding	0.60
321:							
Swanboy	35	Somewhat limited		Somewhat limited		Very limited	
		Too clayey	0.50	Too clayey	0.50	Sodium content	1.00
						Too clayey	1.00
Cedar Butte	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
Slickspots	15	Not rated		Not rated		Very limited	
						Salinity	1.00
						Sodium content	1.00
						Too clayey	1.00
						Droughty	0.01
322:							
Toby	40	Not limited		Not limited		Not limited	
Twilight	30	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.54
Blacksheep	15	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.99
323:							
Ucross	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.37
						Depth to bedrock	0.35
Fairburn	35	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	1.00
						Droughty	0.83
						Slope	0.37
324:							
Ucross	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Dusty	0.50	Slope	1.00
		Dusty	0.50			Depth to bedrock	0.35
Fairburn	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Dusty	0.50	Depth to bedrock	1.00
		Dusty	0.50			Slope	1.00
						Droughty	0.83

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
325:							
Ucross, wooded------	45	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Depth to bedrock	0.29
Fairburn, wooded----	35	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.93
326:							
Ucross, wooded------	35	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.32
Iwait, wooded-------	25	Not limited		Not limited		Not limited	
Fairburn, wooded----	20	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.87
327:							
Ulm-----------------	45	Not limited		Not limited		Not limited	
Bidman--------------	40	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
328:							
Ulm-----------------	80	Not limited		Not limited		Not limited	
329:							
Ulm-----------------	90	Not limited		Not limited		Not limited	
330:							
Ulm-----------------	85	Not limited		Not limited		Not limited	
331:							
Valent--------------	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.68	Too sandy	0.68	Droughty	0.69
Duneland------------	35	Not rated		Not rated		Somewhat limited	
						Droughty	0.69
						Slope	0.16
332:							
Vanstel-------------	50	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Pinehill------------	35	Not limited		Not limited		Not limited	
333:							
Vonalee-------------	40	Not limited		Not limited		Not limited	
Terro---------------	25	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.46
						Slope	0.37

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
333:(cont.)							
Taluce--------------	15	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.84
334:							
Vonalf--------------	40	Not limited		Not limited		Not limited	
Xema----------------	25	Not limited		Not limited		Somewhat limited	
						Slope	0.37
						Depth to bedrock	0.35
Mittenbutte---------	15	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.96
335:							
Wibaux--------------	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Dusty	0.50	Droughty	1.00
		Dusty	0.50			Slope	1.00
						Gravel content	0.08
Shingle-------------	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Dusty	0.50	Depth to bedrock	1.00
		Dusty	0.50			Slope	1.00
						Droughty	0.99
Taluce--------------	20	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.84
336:							
Wibaux, wooded------	30	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Droughty	1.00
						Slope	1.00
Shingle, wooded-----	25	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.99
Taluce, wooded------	20	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.87
337:							
Winler--------------	50	Somewhat limited		Somewhat limited		Very limited	
		Too clayey	0.50	Too clayey	0.50	Too clayey	1.00
						Depth to bedrock	0.29
Twotop--------------	35	Somewhat limited		Somewhat limited		Very limited	
		Too clayey	0.50	Too clayey	0.50	Too clayey	1.00

Trails and Golf Fairways--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
338:							
Zigweid	50	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Not limited	
Cambria	30	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Not limited	
339:							
Zigweid	30	Not limited		Not limited		Somewhat limited Slope	 0.26
Kishona	30	Somewhat limited Dusty	 0.50	Somewhat limited Dusty	 0.50	Somewhat limited Slope	 0.26
Cambria	25	Very limited Water erosion Dusty	 1.00 0.50	Very limited Water erosion Dusty	 1.00 0.50	Somewhat limited Slope	 0.26

Dwellings and Small Commercial Buildings

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
103:							
Arwite	85	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
105:							
Arwite	50	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
Elwop	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.10		
106:							
Arwite	45	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Slope	0.04	Slope	1.00
		Slope	0.04			Shrink-swell	0.50
Elwop	35	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
				Depth to soft bedrock	0.10		
107:							
Arwite	45	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
Vonalf	35	Not limited		Not limited		Not limited	
122:							
Cushman	50	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Depth to soft bedrock	0.46	Shrink-swell	0.50
				Slope	0.37		
Cambria	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
131:							
Deekay	80	Not limited		Not limited		Not limited	
132:							
Deekay	50	Not limited		Not limited		Not limited	
Moorhead	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
133:							
Deekay	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
133:(cont.)							
Moorhead------------	40	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
134:							
Deekay--------------	50	Not limited		Not limited		Not limited	
Oldwolf-------------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.29		
135:							
Deekay--------------	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Oldwolf-------------	30	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
				Depth to soft bedrock	0.29		
136:							
Deekay--------------	50	Not limited		Not limited		Not limited	
Ziggy---------------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
137:							
Echeta--------------	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
138:							
Echeta--------------	45	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Cromack-------------	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.37	Depth to soft bedrock	0.54	Slope	1.00
				Slope	0.37		
144:							
Forkwood------------	80	Not limited		Not limited		Not limited	
146:							
Forkwood------------	50	Not limited		Not limited		Not limited	
Cushman-------------	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.46		
147:							
Forkwood------------	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
147:(cont.)							
Cushman	30	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Depth to soft bedrock	0.46	Shrink-swell	0.50
				Slope	0.37		
148:							
Forkwood	50	Not limited		Not limited		Not limited	
Ulm	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
149:							
Forkwood	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Ulm	30	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
151:							
Haverdad	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
155:							
Heldt, saline	45	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Bidman, saline	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
162:							
Lismas	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Mittenbutte, cool	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Sabatka	20	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
164:							
Lismas	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
164:(cont.)							
Sabatka	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
Badland	10	Not rated		Not rated		Not rated	
166:							
Jaywest	80	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
167:							
Jaywest	40	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Moorhead	40	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
168:							
Jaywest	50	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Spottedhorse	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.10		
170:							
Keeline	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
Tullock	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.64		
174:							
Brislawn	30	Very limited		Not limited		Very limited	
		Shrink-swell	1.00			Shrink-swell	1.00
Rockybutte	30	Not limited		Not limited		Not limited	
Ironbutte	20	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
						Slope	0.12
176:							
Leiter	50	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.20	Slope	0.88
Cromack	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.54	Slope	0.88

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
181:							
Moorhead	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
182:							
Moorhead	85	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
183:							
Moorhead	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Leiter	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.20		
184:							
Moorhead	45	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
Leiter	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.37	Slope	0.37	Slope	1.00
				Depth to soft bedrock	0.20		
185:							
Moskee	85	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
187:							
Nuncho	80	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
191:							
Pits	60	Not rated		Not rated		Not rated	
Dumps	40	Not rated		Not rated		Not rated	
192:							
Platmak	80	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
198:							
Recluse	80	Not limited		Not limited		Not limited	
203:							
Rockypoint	45	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Iwait	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
204:							
Samday	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Shrink-swell	1.00	Depth to soft bedrock	1.00	Shrink-swell	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Samday, cool	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Shrink-swell	1.00	Depth to soft bedrock	1.00	Shrink-swell	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Shingle	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
206:							
Samday	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Shrink-swell	1.00	Slope	1.00
		Shrink-swell	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Shrink-swell	1.00
Shingle	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to soft bedrock	1.00
Badland	15	Not rated		Not rated		Not rated	
207:							
Cromack	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.04	Depth to soft bedrock	0.54	Slope	1.00
				Slope	0.04		
Fairburn	30	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
Ucross	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.35		
210:							
Shingle	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
210:(cont.)							
Taluce	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
215:							
Theedle	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.06		
Kishona	30	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
216:							
Theedle	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to soft bedrock	0.64	Shrink-swell	0.50
				Shrink-swell	0.50		
Kishona	20	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
Shingle	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
217:							
Theedle	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to soft bedrock	0.64	Shrink-swell	0.50
				Shrink-swell	0.50		
Shingle	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
219:							
Torriarents	50	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.16	Slope	0.16	Shrink-swell	0.50
Torriorthents	50	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.16	Slope	0.16	Shrink-swell	0.50
220:							
Pitchdraw	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.35		

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
220:(cont.)							
Ashollow	25	Somewhat limited Slope	 0.04	Somewhat limited Slope	 0.04	Very limited Slope	 1.00
Niobrara	20	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00
221:							
Turnercrest	35	Very limited Slope	 1.00	Very limited Slope Depth to soft bedrock	 1.00 0.29	Very limited Slope	 1.00
Keeline	30	Somewhat limited Slope	 0.16	Somewhat limited Slope	 0.16	Very limited Slope	 1.00
Taluce	15	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00
223:							
Ucross	80	Somewhat limited Shrink-swell	 0.50	Somewhat limited Shrink-swell Depth to soft bedrock	 0.50 0.35	Somewhat limited Shrink-swell Slope	 0.50 0.12
224:							
Ucross	50	Somewhat limited Shrink-swell	 0.50	Somewhat limited Shrink-swell Depth to soft bedrock	 0.50 0.35	Somewhat limited Shrink-swell	 0.50
Iwait	30	Somewhat limited Shrink-swell	 0.50	Somewhat limited Shrink-swell	 0.50	Somewhat limited Shrink-swell	 0.50
225:							
Ucross	35	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope Shrink-swell Depth to soft bedrock	 1.00 0.50 0.35	Very limited Slope Shrink-swell	 1.00 0.50
Iwait	25	Somewhat limited Shrink-swell Slope	 0.50 0.04	Somewhat limited Shrink-swell Slope	 0.50 0.04	Very limited Slope Shrink-swell	 1.00 0.50
Fairburn	20	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00
228:							
Ulm	45	Very limited Shrink-swell	 1.00	Somewhat limited Shrink-swell	 0.50	Very limited Shrink-swell	 1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
228:(cont.)							
Renohill	40	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.10		
229:							
Ulm	45	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
						Slope	1.00
Renohill	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.37	Slope	0.37	Slope	1.00
				Depth to soft bedrock	0.10		
233:							
Ustic Torriorthents, gullied	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.10		
234:							
Ustic Torriorthents	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.10		
Badland	20	Not rated		Not rated		Not rated	
236:							
Vonalee	50	Not limited		Not limited		Not limited	
Terro	30	Not limited		Somewhat limited		Somewhat limited	
				Depth to soft bedrock	0.46	Slope	0.50
238:							
Vonalf	50	Not limited		Not limited		Not limited	
Xema	30	Not limited		Somewhat limited		Somewhat limited	
				Depth to soft bedrock	0.35	Slope	0.88
239:							
Ironbutte	30	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Fairburn	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
239:(cont.)							
Mittenbutte	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
241:							
Ironbutte	55	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Ironbutte, thin solum	30	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
244:							
Muleherder	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Ironbutte	40	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
248:							
Ziggy	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Iwait	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
249:							
Ziggy	50	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
						Shrink-swell	0.50
Iwait	30	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
						Shrink-swell	0.50
250:							
Ziggy	35	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
						Shrink-swell	0.50
Ucross	30	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
				Depth to soft bedrock	0.35		
Oldwolf	20	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
				Depth to soft bedrock	0.29		

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
251:							
Water	100	Not rated		Not rated		Not rated	
252:							
Absted	45	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Slickspots	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
253:							
Absted	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Arvada	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Slickspots	20	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
254:							
Badland	50	Not rated		Not rated		Not rated	
Lismas	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
255:							
Bidman	45	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Parmleed	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.03		
256:							
Bidman	55	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Ulm	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
257:							
Bonfri, deep	50	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
Bonfri	30	Not limited		Somewhat limited		Not limited	
				Depth to soft bedrock	0.54		
258:							
Bonfri	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.29		

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
258:(cont.)							
Kirby	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Content of large stones	0.92	Content of large stones	0.92	Content of large stones	0.92
						Slope	0.12
259:							
Bonfri	40	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.16	Depth to soft bedrock	0.46	Shrink-swell	0.50
				Slope	0.16		
Twilight	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.54		
Blacksheep	15	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
260:							
Cabbart, wooded	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Volborg, wooded	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Shrink-swell	1.00	Depth to soft bedrock	1.00	Shrink-swell	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Badland	15	Not rated		Not rated		Not rated	
261:							
Cabbart	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Yawdim	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Shrink-swell	1.00	Depth to bedrock	1.00	Shrink-swell	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Badland	15	Not rated		Not rated		Not rated	
262:							
Cambria	30	Not limited		Not limited		Not limited	
Kishona	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
262:(cont.)							
Zigweid	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
263:							
Cedar Butte	65	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Slickspots	20	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
264:							
Clarkelen	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Draknab	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
265:							
Clarkelen	45	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Draknab	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Boruff	15	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
266:							
Coaliams, moderately saline	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.95		
267:							
Cromack	45	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.54	Slope	1.00
Samsil	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Shrink-swell	1.00	Depth to soft bedrock	1.00	Shrink-swell	1.00
						Slope	1.00
268:							
Decolney	45	Not limited		Not limited		Not limited	
Hiland	40	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
269:							
Decolney	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
269:(cont.)							
Hiland	40	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Slope	0.04	Slope	1.00
		Slope	0.04			Shrink-swell	0.50
270:							
Deekay	40	Not limited		Not limited		Not limited	
Deekay, stratified substratum	40	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
271:							
Delpoint	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.20		
Cabbart	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
272:							
Delpoint	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.20		
Yamacall	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
Cabbart	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
273:							
Delpoint, wooded	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.15		
Yamacall, wooded	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
Cabbart, wooded	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
274:							
Denied access	100	Not rated		Not rated		Not rated	

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
275:							
Echeta	45	Very limited Shrink-swell	 1.00	Very limited Shrink-swell	 1.00	Very limited Shrink-swell	 1.00
Moorhead	40	Somewhat limited Shrink-swell	 0.50	Somewhat limited Shrink-swell	 0.50	Somewhat limited Shrink-swell	 0.50
276:							
Elwop, wooded	35	Somewhat limited Shrink-swell Slope	 0.50 0.16	Somewhat limited Shrink-swell Slope Depth to soft bedrock	 0.50 0.16 0.10	Very limited Slope Shrink-swell	 1.00 0.50
Mittenbutte, wooded	35	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
277:							
Fairburn	40	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00
Mittenbutte	25	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00
Badland	15	Not rated		Not rated		Not rated	
278:							
Fairburn	35	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Slope Depth to soft bedrock	 1.00 1.00
Samsil	30	Very limited Depth to soft bedrock Shrink-swell Slope	 1.00 1.00 1.00	Very limited Shrink-swell Depth to soft bedrock Slope	 1.00 1.00 1.00	Very limited Slope Depth to soft bedrock Shrink-swell	 1.00 1.00 1.00
Badland	15	Not rated		Not rated		Not rated	
279:							
Fairburn, wooded	35	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00
Samsil, wooded	30	Very limited Depth to soft bedrock Shrink-swell Slope	 1.00 1.00 1.00	Very limited Shrink-swell Depth to soft bedrock Slope	 1.00 1.00 1.00	Very limited Depth to soft bedrock Shrink-swell Slope	 1.00 1.00 1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
279:(cont.)							
Badland	15	Not rated		Not rated		Not rated	
280:							
Felix	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Ponding	1.00	Ponding	1.00	Ponding	1.00
281:							
Foreleft	80	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
282:							
Foreleft	50	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
						Slope	0.12
Bonfri	30	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
				Depth to soft bedrock	0.29	Shrink-swell	0.50
283:							
Gateson, wooded	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.03		
Xema, wooded	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.01		
Mittenbutte, wooded	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
284:							
Haverdad	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Depth to saturated zone	0.95	Shrink-swell	0.50
				Shrink-swell	0.50		
285:							
Haverdad	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Boruff	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
286:							
Havre	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Bigsandy	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
287:							
Hiland	45	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Slope	0.50
						Shrink-swell	0.50
Bowbac	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Depth to soft bedrock	0.90	Slope	1.00
				Slope	0.16		
288:							
Hiland	50	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
Bowbac	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.01		
289:							
Hiland	45	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Slope	0.04	Slope	1.00
		Slope	0.04			Shrink-swell	0.50
Bowbac	35	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
				Depth to soft bedrock	0.01		
290:							
Hiland	50	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Slope	0.04	Slope	1.00
		Slope	0.04			Shrink-swell	0.50
Decolney	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
291:							
Ironbutte, wooded	35	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Fairburn, wooded	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
291:(cont.)							
Mittenbutte, wooded	15	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
292:							
Jaywest	45	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Jaywest, stratified substratum	40	Not limited		Not limited		Not limited	
293:							
Jaywest, saline substratum	40	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
Cedar Butte	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Slickspots	15	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
294:							
Kirby, wooded	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.83	Content of large stones	0.83	Content of large stones	0.83
Cabbart, wooded	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Blacksheep, wooded	15	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
295:							
Lismas	40	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.16	Slope	0.16	Slope	1.00
Sabatka	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.16	Depth to soft bedrock	0.46	Slope	1.00
				Slope	0.16		
Xema	15	Not limited		Somewhat limited		Very limited	
				Depth to soft bedrock	0.20	Slope	1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296:							
Megonot	50	Very limited Shrink-swell	 1.00	Very limited Shrink-swell Depth to soft bedrock	 1.00 0.20	Very limited Shrink-swell Slope	 1.00 1.00
Yawdim	35	Very limited Depth to soft bedrock Shrink-swell Slope	 1.00 1.00 0.16	Very limited Shrink-swell Depth to soft bedrock Slope	 1.00 1.00 0.16	Very limited Depth to soft bedrock Shrink-swell Slope	 1.00 1.00 1.00
297:							
Muleherder, wooded	45	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
Ironbutte, wooded	40	Very limited Content of large stones Slope	 1.00 1.00	Very limited Content of large stones Slope	 1.00 1.00	Very limited Slope Content of large stones	 1.00 1.00
298:							
Nuncho	85	Very limited Shrink-swell	 1.00	Very limited Shrink-swell	 1.00	Very limited Shrink-swell	 1.00
299:							
Oldwolf	50	Somewhat limited Shrink-swell	 0.50	Somewhat limited Shrink-swell Depth to soft bedrock	 0.50 0.29	Somewhat limited Slope Shrink-swell	 0.50 0.50
Fairburn	30	Somewhat limited Depth to soft bedrock	 1.00	Very limited Depth to soft bedrock	 1.00	Very limited Depth to soft bedrock Slope	 1.00 1.00
300:							
Oshoto	50	Somewhat limited Shrink-swell	 0.50	Not limited		Somewhat limited Shrink-swell	 0.50
Klinedraw	35	Somewhat limited Shrink-swell	 0.50	Somewhat limited Shrink-swell Depth to soft bedrock	 0.50 0.29	Somewhat limited Shrink-swell	 0.50
301:							
Oshoto	45	Somewhat limited Shrink-swell	 0.50	Not limited		Very limited Slope Shrink-swell	 1.00 0.50
Klinedraw	35	Somewhat limited Shrink-swell Slope	 0.50 0.16	Somewhat limited Shrink-swell Depth to soft bedrock Slope	 0.50 0.29 0.16	Very limited Slope Shrink-swell	 1.00 0.50

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
302:							
Oshoto	50	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
Moorhead	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
303:							
Oshoto	50	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
Ziggy	35	Not limited		Not limited		Not limited	
304:							
Parmleed	40	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.46	Slope	0.50
Bidman	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
305:							
Pinehill	85	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
306:							
Pinehill	50	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
						Slope	0.12
Pylon	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.46	Slope	1.00
307:							
Pinehill, loam	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Pinehill, clay loam	40	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
308:							
Pinehill	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
Pylon	35	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
				Depth to soft bedrock	0.15	Shrink-swell	0.50
309:							
Pitchdraw	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Depth to soft bedrock	0.35	Slope	1.00
				Slope	0.16		

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
309:(cont.)							
Ashollow	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Mittenbutte	15	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
310:							
Rockypoint	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
311:							
Rockypoint	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Boruff	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
312:							
Rockypoint	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Sodawells	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
313:							
Savageton	45	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.54	Slope	0.50
Samday	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Shrink-swell	1.00	Depth to soft bedrock	1.00	Shrink-swell	1.00
						Slope	0.50
314:							
Savageton	45	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.37	Slope	0.37	Slope	1.00
				Depth to soft bedrock	0.35		
Silhouette	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
						Slope	1.00
315:							
Shingle	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
315:(cont.)							
Taluce	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Badland	15	Not rated		Not rated		Not rated	
316:							
Shingle, wooded	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Taluce, wooded	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Badland	15	Not rated		Not rated		Not rated	
317:							
Silhouette	45	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Ulm	35	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
318:							
Sodawells	45	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Pathfinder	30	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Boruff	15	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
319:							
Spottedhorse	45	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.10		
Leiter	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.20		
320:							
Stetter	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
321:							
Swanboy	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Cedar Butte	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Slickspots	15	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
322:							
Toby	40	Not limited		Not limited		Very limited	
						Slope	1.00
Twilight	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.54		
Blacksheep	15	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
323:							
Ucross	45	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
				Depth to soft bedrock	0.35		
Fairburn	35	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.37	Slope	0.37	Slope	1.00
324:							
Ucross	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.35		
Fairburn	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
325:							
Ucross, wooded	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.29		
Fairburn, wooded	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to soft bedrock	1.00

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
326:							
Ucross, wooded------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.32		
Iwait, wooded-------	25	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
						Shrink-swell	0.50
Fairburn, wooded----	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
327:							
Ulm-----------------	45	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
Bidman--------------	40	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
328:							
Ulm-----------------	80	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
329:							
Ulm-----------------	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
330:							
Ulm-----------------	85	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
						Slope	1.00
331:							
Valent--------------	60	Not limited		Not limited		Somewhat limited	
						Slope	0.88
Duneland------------	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
332:							
Vanstel-------------	50	Not limited		Not limited		Not limited	
Pinehill------------	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
333:							
Vonalee-------------	40	Not limited		Not limited		Somewhat limited	
						Slope	0.50
Terro---------------	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Depth to soft bedrock	0.46	Slope	1.00
				Slope	0.37		

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
333:(cont.)							
Taluce--------------	15	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
334:							
Vonalf--------------	40	Not limited		Not limited		Very limited	
						Slope	1.00
Xema----------------	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
				Depth to soft bedrock	0.35		
Mittenbutte---------	15	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
335:							
Wibaux--------------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.99	Content of large stones	0.99	Content of large stones	0.99
Shingle-------------	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Taluce--------------	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
336:							
Wibaux, wooded------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.99	Content of large stones	0.99	Content of large stones	0.99
Shingle, wooded-----	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Taluce, wooded------	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
337:							
Winler--------------	50	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.29		

Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
337:(cont.)							
Twotop	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
338:							
Zigweid	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Cambria	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
339:							
Zigweid	30	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.26	Slope	0.26	Shrink-swell	0.50
Kishona	30	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.26	Slope	0.26	Shrink-swell	0.50
Cambria	25	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.26	Slope	0.26	Shrink-swell	0.50

Roads and Streets, Shallow Excavations, and Lawns and Landscaping

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
103:							
Arwite	85	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
105:							
Arwite	50	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
Elwop	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Depth to bedrock	0.10
		Frost action	0.50	Depth to soft bedrock	0.10		
106:							
Arwite	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
Elwop	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Slope	0.37	Slope	0.37
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.10
		Slope	0.37	Depth to soft bedrock	0.10		
107:							
Arwite	45	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
Vonalf	35	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
122:							
Cushman	50	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Shrink-swell	0.50			Slope	0.37
		Frost action	0.50	Slope	0.37		
		Slope	0.37	Cutbanks cave	0.10		
Cambria	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
131:							
Deekay	80	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
132:							
Deekay--------------	50	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
Moorhead------------	35	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00				
133:							
Deekay--------------	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
Moorhead------------	40	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Shrink-swell	1.00	Slope	0.04		
		Slope	0.04				
134:							
Deekay--------------	50	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
Oldwolf-------------	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.29	Depth to bedrock	0.29
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
135:							
Deekay--------------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
Oldwolf-------------	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	0.50	Depth to soft bedrock	0.29	Depth to bedrock	0.29
		Frost action	0.50				
		Slope	0.37	Cutbanks cave	0.10		
136:							
Deekay--------------	50	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
Ziggy---------------	30	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
137:							
Echeta--------------	85	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
138:							
Echeta	45	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Shrink-swell	1.00	Slope	0.04		
		Slope	0.04	Too clayey	0.02		
Cromack	35	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.54	Depth to bedrock	0.54
		Shrink-swell	1.00			Slope	0.37
		Slope	0.37	Slope	0.37		
				Cutbanks cave	0.10		
				Too clayey	0.02		
144:							
Forkwood	80	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
146:							
Forkwood	50	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Cutbanks cave	0.10		
Cushman	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Shrink-swell	0.50				
				Cutbanks cave	0.10		
147:							
Forkwood	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
Cushman	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Shrink-swell	0.50			Slope	0.37
		Frost action	0.50	Slope	0.37		
		Slope	0.37	Cutbanks cave	0.10		
148:							
Forkwood	50	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
Ulm	35	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50	Too clayey	0.02		
149:							
Forkwood	55	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
Ulm	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Shrink-swell	0.50	Slope	0.04		
		Slope	0.04	Too clayey	0.02		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
151:							
Haverdad	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Low strength	1.00	Cutbanks cave	0.10		
		Frost action	0.50				
155:							
Heldt, saline	45	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
Bidman, saline	35	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00				
162:							
Lismas	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10	Droughty	0.83
		Slope	1.00				
Mittenbutte, cool	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.84
Sabatka	20	Very limited		Very limited		Very limited	
		Low strength	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Slope	1.00	Cutbanks cave	0.10		
164:							
Lismas	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10	Droughty	0.83
		Slope	1.00				
Sabatka	30	Very limited		Very limited		Very limited	
		Low strength	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Slope	1.00	Cutbanks cave	0.10		
Badland	10	Not rated		Not rated		Not rated	
166:							
Jaywest	80	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
167:							
Jaywest	40	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
Moorhead	40	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00				
168:							
Jaywest	50	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
Spottedhorse	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Depth to bedrock	0.10
		Shrink-swell	1.00	Depth to soft bedrock	0.10		
				Too clayey	0.02		
170:							
Keeline	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Slope	0.16	Slope	0.16
		Slope	0.16	Cutbanks cave	0.10		
Tullock	40	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Droughty	1.00
				Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.64	Depth to bedrock	0.65
174:							
Brislawn	30	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
Rockybutte	30	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
Ironbutte	20	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
				Cutbanks cave	0.10	Gravel content	0.06
176:							
Leiter	50	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.20	Depth to bedrock	0.20
		Shrink-swell	1.00	Cutbanks cave	0.10		
				Too clayey	0.02		
Cromack	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.54	Depth to bedrock	0.54
		Shrink-swell	1.00	Cutbanks cave	0.10		
				Too clayey	0.02		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
181:							
Moorhead	80	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50	Too clayey	0.02		
182:							
Moorhead	85	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00				
183:							
Moorhead	50	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50	Too clayey	0.02		
Leiter	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.20	Depth to bedrock	0.20
		Shrink-swell	1.00	Cutbanks cave	0.10		
				Too clayey	0.02		
184:							
Moorhead	45	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Shrink-swell	0.50	Slope	0.04		
		Slope	0.04	Too clayey	0.02		
Leiter	35	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	1.00	Depth to soft bedrock	0.20	Depth to bedrock	0.20
		Slope	0.37	Cutbanks cave	0.10		
				Too clayey	0.02		
185:							
Moskee	85	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
187:							
Nuncho	80	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00				
191:							
Pits	60	Not rated		Not rated		Not rated	
Dumps	40	Not rated		Not rated		Not rated	
192:							
Platmak	80	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
198:							
Recluse	80	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
203:							
Rockypoint	45	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
Iwait	35	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
204:							
Samday	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Low strength	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Droughty	0.86
		Slope	1.00				
Samday, cool	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Shrink-swell	1.00	Slope	1.00	Droughty	1.00
		Slope	1.00	Cutbanks cave	0.10	Slope	1.00
Shingle	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Low strength	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Cutbanks cave	0.10	Droughty	0.28
		Shrink-swell	0.50				
		Frost action	0.50				
206:							
Samday	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Low strength	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Droughty	0.86
		Slope	1.00				
Shingle	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.99
		Frost action	0.50				
Badland	15	Not rated		Not rated		Not rated	
207:							
Cromack	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.54	Depth to bedrock	0.54
		Shrink-swell	1.00	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
				Too clayey	0.02		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
207:(cont.)							
Fairburn------------	30	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Low strength	0.78	Slope	0.63	Droughty	0.83
		Slope	0.63	Cutbanks cave	0.10	Slope	0.63
		Frost action	0.50				
Ucross-------------	25	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.63	Slope	0.63
		Slope	0.63	Depth to soft bedrock	0.35	Depth to bedrock	0.35
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
210:							
Shingle------------	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.99
		Frost action	0.50				
Taluce-------------	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.84
215:							
Theedle------------	45	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.84	Slope	0.84
		Slope	0.84	Cutbanks cave	0.10	Depth to bedrock	0.06
		Shrink-swell	0.50	Depth to soft bedrock	0.06		
		Frost action	0.50				
Kishona------------	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Shrink-swell	0.50	Slope	0.04		
		Frost action	0.50				
		Slope	0.04				
216:							
Theedle------------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to soft bedrock	0.64	Depth to bedrock	0.65
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
Kishona------------	20	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Shrink-swell	0.50	Slope	0.04		
		Frost action	0.50				
		Slope	0.04				

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
216:(cont.)							
Shingle	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.99
		Frost action	0.50				
217:							
Theedle	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to soft bedrock	0.64	Depth to bedrock	0.65
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
Shingle	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.99
		Frost action	0.50				
219:							
Torriarents	50	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.16	Slope	0.16
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
		Slope	0.16				
Torriorthents	50	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.16	Slope	0.16
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
		Slope	0.16				
220:							
Pitchdraw	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to soft bedrock	0.35	Depth to bedrock	0.35
				Cutbanks cave	0.10		
Ashollow	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
Niobrara	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
				Cutbanks cave	0.10	Slope	1.00
221:							
Turnercrest	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to soft bedrock	0.29	Depth to bedrock	0.29
				Cutbanks cave	0.10		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
221:(cont.)							
Keeline	30	Somewhat limited Frost action Slope	 0.50 0.16	Somewhat limited Slope Cutbanks cave	 0.16 0.10	Somewhat limited Slope	 0.16
Taluce	15	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope Cutbanks cave	 1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 0.99
223:							
Ucross	80	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Somewhat limited Depth to soft bedrock Cutbanks cave	 0.35 0.10	Somewhat limited Depth to bedrock	 0.35
224:							
Ucross	50	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Somewhat limited Depth to soft bedrock Cutbanks cave	 0.35 0.10	Somewhat limited Depth to bedrock	 0.35
Iwait	30	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
225:							
Ucross	35	Very limited Slope Low strength Shrink-swell Frost action	 1.00 1.00 0.50 0.50	Very limited Slope Depth to soft bedrock Cutbanks cave	 1.00 0.35 0.10	Very limited Slope Depth to bedrock	 1.00 0.35
Iwait	25	Very limited Low strength Shrink-swell Frost action Slope	 1.00 0.50 0.50 0.04	Somewhat limited Cutbanks cave Slope	 0.10 0.04	Somewhat limited Slope	 0.04
Fairburn	20	Very limited Depth to soft bedrock Slope Low strength Frost action	 1.00 1.00 0.78 0.50	Very limited Depth to soft bedrock Slope Cutbanks cave	 1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 0.83
228:							
Ulm	45	Very limited Low strength Shrink-swell	 1.00 1.00	Somewhat limited Cutbanks cave Too clayey	 0.10 0.02	Not limited	
Renohill	40	Very limited Low strength Shrink-swell	 1.00 1.00	Somewhat limited Cutbanks cave Depth to soft bedrock Too clayey	 0.10 0.10 0.02	Somewhat limited Depth to bedrock	 0.10

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
229:							
Ulm	45	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
Renohill	35	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	1.00	Cutbanks cave	0.10	Depth to bedrock	0.10
		Slope	0.37	Depth to soft bedrock	0.10		
				Too clayey	0.02		
233:							
Ustic Torriorthents, gullied	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.10
				Depth to soft bedrock	0.10		
234:							
Ustic Torriorthents	65	Not rated		Very limited		Very limited	
				Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Depth to bedrock	0.10
				Depth to soft bedrock	0.10		
Badland	20	Not rated		Not rated		Not rated	
236:							
Vonalee	50	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
Terro	30	Not limited		Somewhat limited		Somewhat limited	
				Depth to soft bedrock	0.46	Depth to bedrock	0.46
				Cutbanks cave	0.10		
238:							
Vonalf	50	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
Xema	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to soft bedrock	0.35	Depth to bedrock	0.35
				Cutbanks cave	0.10		
239:							
Ironbutte	30	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
						Slope	1.00
		Slope	1.00	Slope	1.00	Gravel content	0.06
				Cutbanks cave	0.10		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
239:(cont.)							
Fairburn	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.83
		Frost action	0.50				
Mittenbutte	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.96
241:							
Ironbutte	55	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Gravel content	0.06
Ironbutte, thin solum	30	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Gravel content	0.06
244:							
Muleherder	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	0.29
						Gravel content	0.01
Ironbutte	40	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Gravel content	0.06
248:							
Ziggy	50	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
Iwait	30	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
249:							
Ziggy	50	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
249:(cont.)							
Iwait	30	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
250:							
Ziggy	35	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
Ucross	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	0.50	Depth to soft bedrock	0.35	Depth to bedrock	0.35
		Frost action	0.50				
		Slope	0.37	Cutbanks cave	0.10		
Oldwolf	20	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	0.50	Depth to soft bedrock	0.29	Depth to bedrock	0.29
		Frost action	0.50				
		Slope	0.37	Cutbanks cave	0.10		
251:							
Water	100	Not rated		Not rated		Not rated	
252:							
Absted	45	Very limited		Somewhat limited		Very limited	
		Low strength	1.00	Cutbanks cave	0.10	Sodium content	1.00
		Shrink-swell	1.00				
Slickspots	35	Not rated		Not rated		Very limited	
						Salinity	1.00
						Sodium content	1.00
						Droughty	0.01
253:							
Absted	30	Very limited		Somewhat limited		Very limited	
		Low strength	1.00	Cutbanks cave	0.10	Sodium content	1.00
		Shrink-swell	1.00				
Arvada	30	Very limited		Somewhat limited		Very limited	
		Low strength	1.00	Cutbanks cave	0.10	Sodium content	1.00
		Shrink-swell	1.00				
Slickspots	20	Not rated		Not rated		Very limited	
						Salinity	1.00
						Sodium content	1.00
						Droughty	0.01
254:							
Badland	50	Not rated		Not rated		Not rated	

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
254:(cont.)							
Lismas	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Cutbanks cave	0.10	Droughty	0.83
		Low strength	1.00				
255:							
Bidman	45	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
Parmleed	35	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Depth to bedrock	0.03
		Shrink-swell	1.00	Depth to soft bedrock	0.03		
				Too clayey	0.02		
256:							
Bidman	55	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
Ulm	35	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00				
257:							
Bonfri, deep	50	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
Bonfri	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to soft bedrock	0.54	Depth to bedrock	0.54
				Cutbanks cave	0.10		
258:							
Bonfri	50	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.29	Depth to bedrock	0.29
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
Kirby	35	Somewhat limited		Somewhat limited		Very limited	
		Content of large stones	0.92	Content of large stones	0.92	Droughty	0.99
						Gravel content	0.08
				Cutbanks cave	0.10		
259:							
Bonfri	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Shrink-swell	0.50			Slope	0.16
		Frost action	0.50	Slope	0.16		
		Slope	0.16	Cutbanks cave	0.10		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
259:(cont.)							
Twilight	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to soft bedrock	0.54	Depth to bedrock	0.54
				Cutbanks cave	0.10	Droughty	0.01
Blacksheep	15	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.99
260:							
Cabbart, wooded	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.83
		Frost action	0.50				
Volborg, wooded	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Low strength	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Droughty	0.93
		Slope	1.00				
Badland	15	Not rated		Not rated		Not rated	
261:							
Cabbart	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.83
		Frost action	0.50				
Yawdim	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Low strength	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Droughty	0.83
		Slope	1.00				
Badland	15	Not rated		Not rated		Not rated	
262:							
Cambria	30	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
Kishona	30	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
262:(cont.)							
Zigweid	25	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
263:							
Cedar Butte	65	Very limited		Somewhat limited		Very limited	
		Low strength	1.00	Too clayey	0.12	Sodium content	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10		
Slickspots	20	Not rated		Not rated		Very limited	
						Salinity	1.00
						Sodium content	1.00
						Droughty	0.01
264:							
Clarkelen	50	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
		Frost action	0.50	Flooding	0.60		
Draknab	40	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60	Droughty	0.02
265:							
Clarkelen	45	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
		Frost action	0.50	Flooding	0.60		
Draknab	35	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60	Droughty	0.02
Boruff	15	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.60	Too clayey	1.00
		Low strength	1.00	Too clayey	0.12	Flooding	0.60
		Shrink-swell	1.00	Cutbanks cave	0.10		
266:							
Coaliams, moderately saline	90	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Depth to saturated zone	0.95		
		Frost action	0.50	Cutbanks cave	0.10		
		Flooding	0.40				
267:							
Cromack	45	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.54	Depth to bedrock	0.54
		Shrink-swell	1.00	Cutbanks cave	0.10		
				Too clayey	0.02		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
267:(cont.)							
Samsil	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Low strength	1.00	Cutbanks cave	0.10	Droughty	0.89
		Shrink-swell	1.00				
268:							
Decolney	45	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
Hiland	40	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
269:							
Decolney	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
Hiland	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Cutbanks cave	0.10	Slope	0.04
		Shrink-swell	0.50	Slope	0.04		
		Frost action	0.50				
		Slope	0.04				
270:							
Deekay	40	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
Deekay, stratified substratum	40	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
271:							
Delpoint	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to soft bedrock	0.20	Depth to bedrock	0.20
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
Cabbart	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Slope	1.00
		Slope	1.00	Slope	1.00	Droughty	0.83
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
272:							
Delpoint	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to soft bedrock	0.20	Depth to bedrock	0.20
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
272:(cont.)							
Yamacall	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Slope	0.16	Slope	0.16
		Frost action	0.50	Cutbanks cave	0.10		
		Slope	0.16				
Cabbart	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Slope	1.00
		Slope	1.00	Slope	1.00	Droughty	0.83
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
273:							
Delpoint, wooded	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to soft bedrock	0.15	Depth to bedrock	0.16
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
Yamacall, wooded	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Slope	0.16	Slope	0.16
		Frost action	0.50	Cutbanks cave	0.10		
		Slope	0.16				
Cabbart, wooded	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Slope	1.00
		Slope	1.00	Slope	1.00	Droughty	0.83
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
274:							
Denied access	100	Not rated		Not rated		Not rated	
275:							
Echeta	45	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
Moorhead	40	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50	Too clayey	0.02		
276:							
Elwop, wooded	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Slope	0.16	Slope	0.16
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.10
		Slope	0.16	Depth to soft bedrock	0.10		
Mittenbutte, wooded	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Slope	1.00
		Slope	1.00	Slope	1.00	Droughty	0.99
				Cutbanks cave	0.10		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
276:(cont.)							
Rock outcrop	15	Not rated		Not rated		Not rated	
277:							
Fairburn	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.83
Mittenbutte	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	0.96
Badland	15	Not rated		Not rated		Not rated	
278:							
Fairburn	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.83
Samsil	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Low strength	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Droughty	0.89
		Slope	1.00				
Badland	15	Not rated		Not rated		Not rated	
279:							
Fairburn, wooded	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.87
Samsil, wooded	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Low strength	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Droughty	0.96
		Slope	1.00				
Badland	15	Not rated		Not rated		Not rated	
280:							
Felix	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Depth to saturated zone	1.00	Too clayey	1.00	Depth to saturated zone	1.00
		Low strength	1.00	Cutbanks cave	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
281:							
Foreleft	80	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
282:							
Foreleft	50	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
Bonfri	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.29	Depth to bedrock	0.29
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
283:							
Gateson, wooded	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.03
				Depth to soft bedrock	0.03		
Xema, wooded	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.01
				Depth to soft bedrock	0.01		
Mittenbutte, wooded	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Droughty	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		
284:							
Haverdad	85	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Depth to saturated zone	0.95		
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
		Flooding	0.40				
285:							
Haverdad	50	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Frost action	0.50	Cutbanks cave	0.10		
		Low strength	0.22				
Boruff	40	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.60	Too clayey	1.00
		Low strength	1.00	Cutbanks cave	0.10	Flooding	0.60
		Shrink-swell	1.00	Too clayey	0.02		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
286:							
Havre	50	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
Bigsandy	35	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Flooding	0.60	Flooding	0.60
		Flooding	1.00	Cutbanks cave	0.10		
		Low strength	0.78				
		Shrink-swell	0.50				
287:							
Hiland	45	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
Bowbac	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.16	Depth to soft bedrock	0.90	Depth to bedrock	0.90
				Slope	0.16	Slope	0.16
				Cutbanks cave	0.10	Droughty	0.16
288:							
Hiland	50	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
Bowbac	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Cutbanks cave	0.10	Depth to bedrock	0.01
		Shrink-swell	0.50	Depth to soft bedrock	0.01		
		Frost action	0.50				
289:							
Hiland	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Cutbanks cave	0.10	Slope	0.04
		Shrink-swell	0.50	Slope	0.04		
		Frost action	0.50				
		Slope	0.04				
Bowbac	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Slope	0.37	Slope	0.37
		Shrink-swell	0.50	Cutbanks cave	0.10	Depth to bedrock	0.01
		Frost action	0.50	Depth to soft bedrock	0.01		
		Slope	0.37				
290:							
Hiland	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
Decolney	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	0.10	Slope	0.04
				Slope	0.04		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
291:							
Ironbutte, wooded---	35	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10		
Fairburn, wooded----	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.83
Mittenbutte, wooded-	15	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	0.99
292:							
Jaywest-------------	45	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
Jaywest, stratified substratum---------	40	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
				Too clayey	0.02		
293:							
Jaywest, saline substratum---------	40	Very limited		Somewhat limited		Very limited	
		Low strength	1.00	Cutbanks cave	0.10	Sodium content	1.00
		Shrink-swell	1.00	Too clayey	0.02		
Cedar Butte---------	30	Very limited		Somewhat limited		Very limited	
		Low strength	1.00	Cutbanks cave	0.10	Sodium content	1.00
		Shrink-swell	1.00	Too clayey	0.02		
Slickspots----------	15	Not rated		Not rated		Very limited	
						Salinity	1.00
						Sodium content	1.00
						Too clayey	1.00
						Droughty	0.01
294:							
Kirby, wooded-------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.83	Content of large stones	0.83	Droughty	0.99
				Cutbanks cave	0.10		
Cabbart, wooded-----	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.83
		Frost action	0.50				

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
294:(cont.)							
Blacksheep, wooded	15	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.99
295:							
Lismas	40	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	0.16	Droughty	0.83
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.16
		Slope	0.16				
Sabatka	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Shrink-swell	1.00	Slope	0.16	Slope	0.16
		Slope	0.16	Cutbanks cave	0.10		
Xema	15	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to soft bedrock	0.20	Depth to bedrock	0.20
				Cutbanks cave	0.10		
296:							
Megonot	50	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.20	Depth to bedrock	0.20
		Shrink-swell	1.00	Cutbanks cave	0.10		
Yawdim	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Low strength	1.00	Slope	0.16	Droughty	0.83
		Shrink-swell	1.00	Cutbanks cave	0.10	Slope	0.16
		Slope	0.16				
297:							
Muleherder, wooded	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	0.33
Ironbutte, wooded	40	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10		
298:							
Nuncho	85	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
299:							
Oldwolf	50	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.29	Depth to bedrock	0.29
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
Fairburn	30	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Droughty	0.83
		Low strength	0.78	Cutbanks cave	0.10		
300:							
Oshoto	50	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
Klinedraw	35	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.29	Depth to bedrock	0.29
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
301:							
Oshoto	45	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
Klinedraw	35	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.29	Depth to bedrock	0.29
		Shrink-swell	0.50			Slope	0.16
		Frost action	0.50	Slope	0.16		
		Slope	0.16	Cutbanks cave	0.10		
302:							
Oshoto	50	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
Moorhead	30	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50	Too clayey	0.02		
303:							
Oshoto	50	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
Ziggy	35	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
304:							
Parmleed	40	Very limited		Somewhat limited		Somewhat limited	
		Shrink-swell	1.00	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Low strength	1.00				
				Cutbanks cave	0.10		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
304:(cont.)							
Bidman--------------	30	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
305:							
Pinehill------------	85	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Too clayey	0.12		
		Shrink-swell	1.00	Cutbanks cave	0.10		
306:							
Pinehill------------	50	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Too clayey	0.12		
		Shrink-swell	1.00	Cutbanks cave	0.10		
Pylon---------------	35	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Shrink-swell	1.00				
				Too clayey	0.12		
				Cutbanks cave	0.10		
307:							
Pinehill, loam------	45	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Too clayey	0.12		
		Shrink-swell	0.50	Cutbanks cave	0.10		
Pinehill, clay loam-	40	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Too clayey	0.12		
		Shrink-swell	1.00	Cutbanks cave	0.10		
308:							
Pinehill------------	45	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Too clayey	0.12		
		Shrink-swell	0.50	Cutbanks cave	0.10		
Pylon---------------	35	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.15	Depth to bedrock	0.16
		Shrink-swell	0.50				
				Too clayey	0.12		
				Cutbanks cave	0.10		
309:							
Pitchdraw-----------	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.16	Depth to soft bedrock	0.35	Depth to bedrock	0.35
						Slope	0.16
				Slope	0.16		
				Cutbanks cave	0.10		
Ashollow------------	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	0.10	Slope	0.04
				Slope	0.04		
Mittenbutte---------	15	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Droughty	0.96
		Slope	0.63	Slope	0.63	Slope	0.63
				Cutbanks cave	0.10		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
310:							
Rockypoint	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
311:							
Rockypoint	50	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
Boruff	40	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.60	Too clayey	1.00
		Low strength	1.00	Cutbanks cave	0.10	Flooding	0.60
		Shrink-swell	1.00	Too clayey	0.02		
312:							
Rockypoint	50	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
Sodawells	40	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
		Frost action	0.50	Flooding	0.60		
313:							
Savageton	45	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.54	Depth to bedrock	0.54
		Shrink-swell	1.00	Too clayey	0.12		
				Cutbanks cave	0.10		
Samday	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Droughty	0.85
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00				
314:							
Savageton	45	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	1.00	Depth to soft bedrock	0.35	Depth to bedrock	0.35
		Slope	0.37	Too clayey	0.12		
				Cutbanks cave	0.10		
Silhouette	35	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
315:							
Shingle-------------	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.99
		Frost action	0.50				
Taluce--------------	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.84
Badland-------------	15	Not rated		Not rated		Not rated	
316:							
Shingle, wooded-----	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.99
		Frost action	0.50				
Taluce, wooded------	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.87
Badland-------------	15	Not rated		Not rated		Not rated	
317:							
Silhouette----------	45	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
Ulm-----------------	35	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
318:							
Sodawells-----------	45	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
		Frost action	0.50	Flooding	0.60		
Pathfinder----------	30	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60	Droughty	0.02
Boruff--------------	15	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.60	Too clayey	1.00
		Low strength	1.00	Cutbanks cave	0.10	Flooding	0.60
		Shrink-swell	1.00	Too clayey	0.02		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
319:							
Spottedhorse	45	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Depth to bedrock	0.10
		Shrink-swell	1.00	Depth to soft bedrock	0.10		
				Too clayey	0.02		
Leiter	35	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.20	Depth to bedrock	0.20
		Shrink-swell	1.00	Cutbanks cave	0.10		
				Too clayey	0.02		
320:							
Stetter	85	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.60	Too clayey	1.00
		Low strength	1.00	Too clayey	0.50	Flooding	0.60
		Shrink-swell	1.00	Cutbanks cave	0.10		
321:							
Swanboy	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Too clayey	1.00	Sodium content	1.00
		Low strength	1.00	Cutbanks cave	1.00	Too clayey	1.00
Cedar Butte	30	Very limited		Somewhat limited		Very limited	
		Low strength	1.00	Too clayey	0.12	Sodium content	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10		
Slickspots	15	Not rated		Not rated		Very limited	
						Salinity	1.00
						Sodium content	1.00
						Too clayey	1.00
						Droughty	0.01
322:							
Toby	40	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
Twilight	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to soft bedrock	0.54	Depth to bedrock	0.54
				Cutbanks cave	0.10		
Blacksheep	15	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.99
323:							
Ucross	45	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	0.50	Depth to soft bedrock	0.35	Depth to bedrock	0.35
		Frost action	0.50	Cutbanks cave	0.10		
		Slope	0.37				

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
323:(cont.)							
Fairburn	35	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Droughty	0.83
		Low strength	0.78	Slope	0.37	Slope	0.37
		Slope	0.37	Cutbanks cave	0.10		
324:							
Ucross	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to soft bedrock	0.35	Depth to bedrock	0.35
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
Fairburn	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00			Slope	1.00
				Slope	1.00	Droughty	0.83
		Low strength	0.78	Cutbanks cave	0.10		
325:							
Ucross, wooded	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to soft bedrock	0.29	Depth to bedrock	0.29
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
Fairburn, wooded	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Slope	1.00
		Slope	1.00	Slope	1.00	Droughty	0.93
		Low strength	0.78	Cutbanks cave	0.10		
326:							
Ucross, wooded	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to soft bedrock	0.32	Depth to bedrock	0.32
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
Iwait, wooded	25	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
Fairburn, wooded	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Slope	1.00
		Slope	1.00	Slope	1.00	Droughty	0.87
		Low strength	0.78	Cutbanks cave	0.10		
327:							
Ulm	45	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
327:(cont.)							
Bidman	40	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
328:							
Ulm	80	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
329:							
Ulm	90	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
330:							
Ulm	85	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
331:							
Valent	60	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.69
Duneland	35	Not rated		Not rated		Somewhat limited	
						Droughty	0.69
						Slope	0.16
332:							
Vanstel	50	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Frost action	0.50				
Pinehill	35	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50	Too clayey	0.02		
333:							
Vonalee	40	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
Terro	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Slope	0.37	Slope	0.37	Slope	0.37
				Cutbanks cave	0.10		
Taluce	15	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.84
334:							
Vonalf	40	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
334:(cont.)							
Xema----------------	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Depth to soft bedrock	0.35	Depth to bedrock	0.35
				Cutbanks cave	0.10		
Mittenbutte---------	15	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.96
335:							
Wibaux--------------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Droughty	1.00
		Content of large stones	0.99	Content of large stones	0.99	Slope	1.00
				Cutbanks cave	0.10	Gravel content	0.08
Shingle-------------	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.99
		Frost action	0.50				
Taluce--------------	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.84
336:							
Wibaux, wooded------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Droughty	1.00
		Content of large stones	0.99	Content of large stones	0.99	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		
Shingle, wooded-----	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.99
		Frost action	0.50				
Taluce, wooded------	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.87

Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
337:							
Winler	50	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Too clayey	1.00	Too clayey	1.00
		Low strength	1.00	Cutbanks cave	1.00	Depth to bedrock	0.29
				Depth to soft bedrock	0.29		
Twotop	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Too clayey	1.00	Too clayey	1.00
		Low strength	1.00	Cutbanks cave	1.00		
338:							
Zigweid	50	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
Cambria	30	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
339:							
Zigweid	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.26	Slope	0.26
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
		Slope	0.26				
Kishona	30	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.26	Slope	0.26
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
		Slope	0.26				
Cambria	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Slope	0.26	Slope	0.26
		Frost action	0.50	Cutbanks cave	0.10		
		Slope	0.26				

Sewage Disposal

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
103:					
Arwite	85	Somewhat limited		Very limited	
		Restricted permeability	0.46	Seepage	1.00
105:					
Arwite	50	Somewhat limited		Very limited	
		Restricted permeability	0.46	Seepage	1.00
Elwop	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restrocted permeability	0.46	Seepage	1.00
				Slope	0.08
106:					
Arwite	45	Somewhat limited		Very limited	
		Restricted permeability	0.46	Seepage	1.00
		Slope	0.04	Slope	1.00
Elwop	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Seepage	1.00
		Slope	0.37	Slope	1.00
107:					
Arwite	45	Somewhat limited		Very limited	
		Restricted permeability	0.46	Seepage	1.00
Vonalf	35	Not limited		Very limited	
				Seepage	1.00
122:					
Cushman	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Slope	1.00
		Slope	0.37	Seepage	0.53
Cambria	30	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
131:					
Deekay	80	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
132:					
Deekay	50	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
Moorhead	35	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.53
133:					
Deekay	45	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
				Seepage	0.53
		Slope	0.04		
Moorhead	40	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Seepage	0.53
		Slope	0.04		
134:					
Deekay	50	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
Oldwolf	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46		
				Seepage	0.53
				Slope	0.08
135:					
Deekay	50	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
				Seepage	0.53
		Slope	0.04		
Oldwolf	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46		
				Slope	1.00
		Slope	0.37	Seepage	0.53
136:					
Deekay	50	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
Ziggy	30	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
137:					
Echeta	85	Very limited		Not limited	
		Restricted permeability	1.00		
138:					
Echeta	45	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.04		
Cromack	35	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.37		
144:					
Forkwood	80	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
146:					
Forkwood	50	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
Cushman	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.08
147:					
Forkwood	50	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
				Seepage	0.53
		Slope	0.04		
Cushman	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Slope	1.00
		Slope	0.37	Seepage	0.53
148:					
Forkwood	50	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
Ulm	35	Very limited		Not limited	
		Restricted permeability	1.00		
149:					
Forkwood	55	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
				Seepage	0.53
		Slope	0.04		

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
149:(cont.)					
Ulm	30	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.04		
151:					
Haverdad	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.46	Seepage	0.53
155:					
Heldt, saline	45	Very limited		Not limited	
		Restricted permeability	1.00		
Bidman, saline	35	Very limited		Not limited	
		Restricted permeability	1.00		
162:					
Lismas	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Mittenbutte, cool	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Seepage	1.00
				Slope	1.00
Sabatka	20	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
164:					
Lismas	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Sabatka	30	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
Badland	10	Not rated		Not rated	
166:					
Jaywest	80	Very limited		Not limited	
		Restricted permeability	1.00		

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
167:					
Jaywest	40	Very limited		Not limited	
		Restricted permeability	1.00		
Moorhead	40	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.53
168:					
Jaywest	50	Very limited		Not limited	
		Restricted permeability	1.00		
Spottedhorse	30	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	0.08
170:					
Keeline	40	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
		Slope	0.16		
Tullock	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00		
				Seepage	1.00
		Slope	1.00	Slope	1.00
174:					
Brislawn	30	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.08
		Restricted permeability	1.00		
Rockybutte	30	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.08
Ironbutte	20	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Content of large stones	1.00
		Content of large stones	1.00		
				Slope	0.68
176:					
Leiter	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	1.00		
				Slope	1.00
Cromack	30	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
181:					
Moorhead	80	Very limited		Not limited	
		Restricted permeability	1.00		
182:					
Moorhead	85	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.53
183:					
Moorhead	50	Very limited		Not limited	
		Restricted permeability	1.00		
Leiter	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	1.00	Slope	0.08
184:					
Moorhead	45	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.04		
Leiter	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	1.00	Slope	1.00
		Slope	0.37		
185:					
Moskee	85	Somewhat limited		Very limited	
		Restricted permeability	0.46	Seepage	1.00
187:					
Nuncho	80	Very limited		Not limited	
		Restricted permeability	1.00		
191:					
Pits	60	Not rated		Not rated	
Dumps	40	Not rated		Not rated	
192:					
Platmak	80	Very limited		Not limited	
		Restricted permeability	1.00		
198:					
Recluse	80	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
203:					
Rockypoint	45	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.46	Seepage	0.53
Iwait	35	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.08
204:					
Samday	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Samday, cool	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Shingle	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.53
206:					
Samday	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Shingle	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Badland	15	Not rated		Not rated	
207:					
Cromack	30	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.04		
Fairburn	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.63	Slope	1.00
				Seepage	0.53
Ucross	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.63	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
210:					
Shingle	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Taluce	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Seepage	1.00
				Slope	1.00
215:					
Theedle	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53
Kishona	30	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
216:					
Theedle	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53
Kishona	20	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
Shingle	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
217:					
Theedle	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53
Shingle	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
219:					
Torriarents	50	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.16		

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
219:(cont.)					
Torriorthents	50	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.16		
220:					
Pitchdraw	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Seepage	1.00
				Slope	1.00
Ashollow	25	Somewhat limited		Very limited	
		Slope	0.04	Seepage	1.00
				Slope	1.00
Niobrara	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00		
221:					
Turnercrest	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Seepage	1.00
				Slope	1.00
Keeline	30	Somewhat limited		Very limited	
		Slope	0.16	Seepage	1.00
				Slope	1.00
Taluce	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Seepage	1.00
				Slope	1.00
223:					
Ucross	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Slope	0.68
				Seepage	0.53
224:					
Ucross	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.08
Iwait	30	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
225:					
Ucross	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53
Iwait	25	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
Fairburn	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.53
228:					
Ulm	45	Very limited		Not limited	
		Restricted permeability	1.00		
Renohill	40	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	0.08
229:					
Ulm	45	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
Renohill	35	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.37		
233:					
Ustic Torriorthents, gullied	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53
234:					
Ustic Torriorthents	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53
Badland	20	Not rated		Not rated	

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
236:					
Vonalee	50	Not limited		Very limited	
				Seepage	1.00
				Slope	0.32
Terro	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Seepage	1.00
				Slope	0.92
238:					
Vonalf	50	Not limited		Very limited	
				Seepage	1.00
				Slope	0.32
Xema	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Seepage	1.00
				Slope	1.00
239:					
Ironbutte	30	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00
		Slope	1.00		
Fairburn	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00		
				Slope	1.00
				Seepage	0.53
Mittenbutte	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00		
				Seepage	1.00
				Slope	1.00
241:					
Ironbutte	55	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00
		Slope	1.00		
Ironbutte, thin solum	30	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Content of large stones	1.00
		Content of large stones	1.00		
				Slope	1.00
		Slope	1.00		

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
244:					
Muleherder	45	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
Ironbutte	40	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Content of large stones	1.00	Content of large stones	1.00
		Slope	1.00	Slope	1.00
248:					
Ziggy	50	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
Iwait	30	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
249:					
Ziggy	50	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
				Seepage	0.53
Iwait	30	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
				Seepage	0.53
250:					
Ziggy	35	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
				Seepage	0.53
Ucross	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Slope	1.00
		Slope	0.37	Seepage	0.53
Oldwolf	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Slope	1.00
		Slope	0.37	Seepage	0.53
251:					
Water	100	Not rated		Not rated	
252:					
Absted	45	Very limited		Somewhat limited	
		Restricted permeability	1.00	Slope	0.08
Slickspots	35	Not rated		Somewhat limited	
				Slope	0.08

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
253:					
Absted	30	Very limited		Not limited	
		Restricted permeability	1.00		
Arvada	30	Very limited		Not limited	
		Restricted permeability	1.00		
Slickspots	20	Not rated		Not limited	
254:					
Badland	50	Not rated		Not rated	
Lismas	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
255:					
Bidman	45	Very limited		Not limited	
		Restricted permeability	1.00		
Parmleed	35	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	0.08
256:					
Bidman	55	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.53
				Slope	0.08
Ulm	35	Very limited		Somewhat limited	
		Restricted permeability	1.00	Slope	0.08
257:					
Bonfri, deep	50	Somewhat limited		Very limited	
		Restricted permeability	0.46	Seepage	1.00
		Depth to bedrock	0.36	Depth to soft bedrock	0.01
Bonfri	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Seepage	1.00
				Slope	0.08
258:					
Bonfri	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.08

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
258:(cont.)					
Kirby	35	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Content of large stones	0.92	Slope	0.68
259:					
Bonfri	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
Twilight	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Seepage	1.00	Slope	1.00
		Slope	1.00		
Blacksheep	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
260:					
Cabbart, wooded	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
Volborg, wooded	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00		
Badland	15	Not rated		Not rated	
261:					
Cabbart	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.53
Yawdim	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Badland	15	Not rated		Not rated	

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
262:					
Cambria	30	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
Kishona	30	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
Zigweid	25	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
263:					
Cedar Butte	65	Very limited		Not limited	
		Restricted permeability	1.00		
Slickspots	20	Not rated		Not limited	
264:					
Clarkelen	50	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
				Seepage	1.00
Draknab	40	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
265:					
Clarkelen	45	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
				Seepage	1.00
Draknab	35	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
Boruff	15	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
266:					
Coaliams, moderately saline	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.46	Seepage	0.53
		Flooding	0.40	Flooding	0.40

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
267:					
Cromack	45	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
Samsil	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Slope	1.00
268:					
Decolney	45	Not limited		Very limited	
				Seepage	1.00
Hiland	40	Somewhat limited		Very limited	
		Restricted permeability	0.46	Seepage	1.00
269:					
Decolney	40	Somewhat limited		Very limited	
		Slope	0.04	Seepage	1.00
				Slope	1.00
Hiland	40	Somewhat limited		Very limited	
		Restricted permeability	0.46	Seepage	1.00
				Slope	1.00
		Slope	0.04		
270:					
Deekay	40	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
Deekay, stratified substratum	40	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
271:					
Delpoint	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00		
		Restricted permeability	0.46	Slope	1.00
				Seepage	0.53
Cabbart	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00		
				Slope	1.00
				Seepage	0.53
272:					
Delpoint	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00		
		Restricted permeability	0.46	Slope	1.00
				Seepage	0.53

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
272:(cont.)					
Yamacall------------	25	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.16	Seepage	0.53
Cabbart-------------	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.53
273:					
Delpoint, wooded----	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
		Restricted permeability	0.46		
Yamacall, wooded----	25	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53
		Slope	0.16		
Cabbart, wooded-----	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
274:					
Denied access-------	100	Not rated		Not rated	
275:					
Echeta--------------	45	Very limited		Not limited	
		Restricted permeability	1.00		
Moorhead------------	40	Very limited		Not limited	
		Restricted permeability	1.00		
276:					
Elwop, wooded-------	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.46	Slope	1.00
		Slope	0.16		

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
276:(cont.)					
Mittenbutte, wooded-	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
Rock outcrop--------	15	Not rated		Not rated	
277:					
Fairburn------------	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.53
Mittenbutte---------	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Seepage	1.00
				Slope	1.00
Badland-------------	15	Not rated		Not rated	
278:					
Fairburn------------	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.53
Samsil--------------	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Badland-------------	15	Not rated		Not rated	
279:					
Fairburn, wooded----	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
Samsil, wooded------	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00		
Badland-------------	15	Not rated		Not rated	

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
280:					
Felix	85	Very limited		Very limited	
		Restricted permeability	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00		
281:					
Foreleft	80	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
282:					
Foreleft	50	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Slope	0.68
				Seepage	0.53
Bonfri	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Slope	1.00
				Seepage	0.53
283:					
Gateson, wooded	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
Xema, wooded	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
Mittenbutte, wooded	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
284:					
Haverdad	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.46	Seepage	0.53
		Flooding	0.40	Flooding	0.40
285:					
Haverdad	50	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.46	Seepage	0.53

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
285:(cont.)					
Boruff	40	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
286:					
Havre	50	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.46	Seepage	0.53
Bigsandy	35	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.46	Seepage	0.53
287:					
Hiland	45	Somewhat limited		Very limited	
		Restricted permeability	0.46	Seepage	1.00
				Slope	0.92
Bowbac	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.16	Seepage	1.00
				Slope	1.00
288:					
Hiland	50	Somewhat limited		Very limited	
		Restricted permeability	0.46	Seepage	1.00
Bowbac	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Seepage	1.00
				Slope	0.08
289:					
Hiland	45	Somewhat limited		Very limited	
		Restricted permeability	0.46	Seepage	1.00
		Slope	0.04	Slope	1.00
Bowbac	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	1.00	Seepage	1.00
		Slope	0.37	Slope	1.00

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
290:					
Hiland--------------	50	Somewhat limited		Very limited	
		Restricted permeability	0.46	Seepage	1.00
		Slope	0.04	Slope	1.00
Decolney------------	35	Somewhat limited		Very limited	
		Slope	0.04	Seepage	1.00
				Slope	1.00
291:					
Ironbutte, wooded---	35	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Content of large stones	1.00	Slope	1.00
		Slope	1.00	Content of large stones	0.84
Fairburn, wooded----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
Mittenbutte, wooded-	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
292:					
Jaywest-------------	45	Very limited		Not limited	
		Restricted permeability	1.00		
Jaywest, stratified substratum---------	40	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
293:					
Jaywest, saline substratum---------	40	Very limited		Not limited	
		Restricted permeability	1.00		
Cedar Butte---------	30	Very limited		Not limited	
		Restricted permeability	1.00		
Slickspots----------	15	Not rated		Not limited	
294:					
Kirby, wooded-------	40	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.83		

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
294:(cont.)					
Cabbart, wooded	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
Blacksheep, wooded	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
295:					
Lismas	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.16	Slope	1.00
Sabatka	30	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.16		
Xema	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Seepage	1.00
				Slope	1.00
296:					
Megonot	50	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
Yawdim	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.16	Slope	1.00
297:					
Muleherder, wooded	45	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
Ironbutte, wooded	40	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Content of large stones	1.00	Seepage	1.00
		Slope	1.00	Content of large stones	0.84
298:					
Nuncho	85	Very limited		Not limited	
		Restricted permeability	1.00		

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
299:					
Oldwolf	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Slope	0.92
				Seepage	0.53
Fairburn	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Slope	1.00
				Seepage	0.53
300:					
Oshoto	50	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
Klinedraw	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.08
301:					
Oshoto	45	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
				Seepage	0.53
Klinedraw	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Slope	1.00
		Slope	0.16	Seepage	0.53
302:					
Oshoto	50	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
Moorhead	30	Very limited		Not limited	
		Restricted permeability	1.00		
303:					
Oshoto	50	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
Ziggy	35	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
304:					
Parmleed	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	1.00	Slope	0.92

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
304:(cont.)					
Bidman	30	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.53
				Slope	0.32
305:					
Pinehill	85	Very limited		Not limited	
		Restricted permeability	1.00		
306:					
Pinehill	50	Very limited		Somewhat limited	
		Restricted permeability	1.00	Slope	0.68
Pylon	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	1.00	Slope	1.00
307:					
Pinehill, loam	45	Very limited		Not limited	
		Restricted permeability	1.00		
Pinehill, clay loam	40	Very limited		Not limited	
		Restricted permeability	1.00		
308:					
Pinehill	45	Very limited		Somewhat limited	
		Restricted permeability	1.00	Slope	0.68
Pylon	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	1.00	Slope	1.00
309:					
Pitchdraw	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.16	Seepage	1.00
				Slope	1.00
Ashollow	25	Somewhat limited		Very limited	
		Slope	0.04	Seepage	1.00
				Slope	1.00
Mittenbutte	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.63	Seepage	1.00
				Slope	1.00

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
310:					
Rockypoint	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.46	Seepage	0.53
311:					
Rockypoint	50	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.46	Seepage	0.53
Boruff	40	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
312:					
Rockypoint	50	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.46	Seepage	0.53
Sodawells	40	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
				Seepage	1.00
313:					
Savageton	45	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	0.92
Samday	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Slope	0.92
314:					
Savageton	45	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.37		
Silhouette	35	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
315:					
Shingle	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
315:(cont.)					
Taluce	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Seepage	1.00
				Slope	1.00
Badland	15	Not rated		Not rated	
316:					
Shingle, wooded	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
Taluce, wooded	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
Badland	15	Not rated		Not rated	
317:					
Silhouette	45	Very limited		Not limited	
		Restricted permeability	1.00		
Ulm	35	Very limited		Not limited	
		Restricted permeability	1.00		
318:					
Sodawells	45	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
				Seepage	1.00
Pathfinder	30	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
Boruff	15	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
319:					
Spottedhorse	45	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	0.08

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
319:(cont.)					
Leiter	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	1.00	Slope	0.08
320:					
Stetter	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	1.00		
321:					
Swanboy	35	Very limited		Not limited	
		Restricted permeability	1.00		
Cedar Butte	30	Very limited		Not limited	
		Restricted permeability	1.00		
Slickspots	15	Not rated		Not limited	
322:					
Toby	40	Not limited		Very limited	
				Seepage	1.00
				Slope	1.00
Twilight	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Seepage	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
Blacksheep	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Seepage	1.00
				Slope	1.00
323:					
Ucross	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.46	Slope	1.00
		Slope	0.37	Seepage	0.53
Fairburn	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.37	Slope	1.00
				Seepage	0.53
324:					
Ucross	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
324:(cont.)					
Fairburn	35	Very limited Depth to bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	 1.00 1.00 0.53
325:					
Ucross, wooded	45	Very limited Depth to bedrock Filtering capacity Slope Restricted permeability	 1.00 1.00 1.00 0.46	Very limited Depth to soft bedrock Slope Seepage	 1.00 1.00 0.53
Fairburn, wooded	35	Very limited Depth to bedrock Filtering capacity Slope	 1.00 1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	 1.00 1.00 0.53
326:					
Ucross, wooded	35	Very limited Depth to bedrock Filtering capacity Slope	 1.00 1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	 1.00 1.00 0.53
Iwait, wooded	25	Very limited Filtering capacity Restricted permeability	 1.00 0.46	Very limited Slope Seepage	 1.00 0.53
Fairburn, wooded	20	Very limited Depth to bedrock Filtering capacity Slope	 1.00 1.00 1.00	Very limited Depth to soft bedrock Slope Seepage	 1.00 1.00 0.53
327:					
Ulm	45	Very limited Restricted permeability	 1.00	Not limited	
Bidman	40	Very limited Restricted permeability	 1.00	Not limited	
328:					
Ulm	80	Very limited Restricted permeability	 1.00	Not limited	
329:					
Ulm	90	Very limited Restricted permeability	 1.00	Somewhat limited Slope	 0.32

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
330:					
Ulm	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
331:					
Valent	60	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
Duneland	35	Not rated		Very limited	
				Seepage	1.00
				Slope	1.00
332:					
Vanstel	50	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
Pinehill	35	Very limited		Not limited	
		Restricted permeability	1.00		
333:					
Vonalee	40	Not limited		Very limited	
				Seepage	1.00
				Slope	0.92
Terro	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.37	Seepage	1.00
				Slope	1.00
Taluce	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Seepage	1.00
				Slope	1.00
334:					
Vonalf	40	Not limited		Very limited	
				Seepage	1.00
				Slope	1.00
Xema	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.37	Seepage	1.00
				Slope	1.00
Mittenbutte	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Seepage	1.00
				Slope	1.00

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
335:					
Wibaux	30	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.99	Content of large stones	0.22
Shingle	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Taluce	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Seepage	1.00
				Slope	1.00
336:					
Wibaux, wooded	30	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.99	Content of large stones	0.03
Shingle, wooded	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
Taluce, wooded	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
337:					
Winler	50	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	0.08
Twotop	35	Very limited		Not limited	
		Restricted permeability	1.00		
338:					
Zigweid	50	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.08
Cambria	30	Somewhat limited		Somewhat limited	
		Restricted permeability	0.47	Seepage	0.53
				Slope	0.08

Sewage Disposal--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
339:					
Zigweid	30	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.26	Seepage	0.53
Kishona	30	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.26	Seepage	0.53
Cambria	25	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.26	Seepage	0.53

Source of Gravel and Sand

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
103:					
Arwite	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
105:					
Arwite	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Elwop	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
106:					
Arwite	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Elwop	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
107:					
Arwite	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Vonalf	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
122:					
Cushman	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cambria	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
131:					
Deekay	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
132:					
Deekay	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
132:(cont.)					
Moorhead	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
133:					
Deekay	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Moorhead	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
134:					
Deekay	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Oldwolf	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
135:					
Deekay	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Oldwolf	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
136:					
Deekay	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ziggy	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
137:					
Echeta	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
138:					
Echeta	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cromack	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
144:					
Forkwood	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
146:					
Forkwood	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cushman	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
147:					
Forkwood	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cushman	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
148:					
Forkwood	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ulm	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
149:					
Forkwood	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ulm	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
151:					
Haverdad	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
155:					
Heldt, saline	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bidman, saline	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
162:					
Lismas	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mittenbutte, cool	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
162:(cont.)					
Sabatka	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
164:					
Lismas	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Sabatka	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badland	10	Not rated		Not rated	
166:					
Jaywest	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
167:					
Jaywest	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Moorhead	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
168:					
Jaywest	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Spottedhorse	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
170:					
Keeline	40	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.02
Tullock	40	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.08
		Thickest layer	0.00	Thickest layer	0.08
174:					
Brislawn	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rockybutte	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
174:(cont.)					
Ironbutte	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
176:					
Leiter	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cromack	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
181:					
Moorhead	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
182:					
Moorhead	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
183:					
Moorhead	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Leiter	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
184:					
Moorhead	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Leiter	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
185:					
Moskee	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
187:					
Nuncho	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
191:					
Pits	60	Not rated		Not rated	
Dumps	40	Not rated		Not rated	

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
192:					
Platmak	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
198:					
Recluse	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
203:					
Rockypoint	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Iwait	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
204:					
Samday	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Samday, cool	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Shingle	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
206:					
Samday	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Shingle	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badland	15	Not rated		Not rated	
207:					
Cromack	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Fairburn	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ucross	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
210:					
Shingle	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Taluce	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
215:					
Theedle	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kishona	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
216:					
Theedle	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kishona	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Shingle	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
217:					
Theedle	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Shingle	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
219:					
Torriarents	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Torriorthents	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
220:					
Pitchdraw	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ashollow	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
220:(cont.)					
Niobrara	20	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.09
221:					
Turnercrest	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Keeline	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Taluce	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
223:					
Ucross	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
224:					
Ucross	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Iwait	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
225:					
Ucross	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Iwait	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Fairburn	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
228:					
Ulm	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Renohill	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
229:					
Ulm	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
229:(cont.)					
Renohill	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
233:					
Ustic Torriorthents, gullied	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
234:					
Ustic Torriorthents	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badland	20	Not rated		Not rated	
236:					
Vonalee	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Terro	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
238:					
Vonalf	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Xema	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
239:					
Ironbutte	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Fairburn	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mittenbutte	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
241:					
Ironbutte	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ironbutte, thin solum	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
244:					
Muleherder	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ironbutte	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
248:					
Ziggy	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Iwait	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
249:					
Ziggy	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Iwait	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
250:					
Ziggy	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ucross	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Oldwolf	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
251:					
Water	100	Not rated		Not rated	
252:					
Absted	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Slickspots	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
253:					
Absted	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
253:(cont.)					
Arvada	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Slickspots	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
254:					
Badland	50	Not rated		Not rated	
Lismas	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
255:					
Bidman	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Parmleed	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
256:					
Bidman	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ulm	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
257:					
Bonfri, deep	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bonfri	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
258:					
Bonfri	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kirby	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
259:					
Bonfri	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
259:(cont.)					
Twilight	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Blacksheep	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
260:					
Cabbart, wooded	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Volborg, wooded	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badland	15	Not rated		Not rated	
261:					
Cabbart	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Yawdim	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badland	15	Not rated		Not rated	
262:					
Cambria	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kishona	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Zigweid	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
263:					
Cedar Butte	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Slickspots	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
264:					
Clarkelen	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
264:(cont.)					
Draknab	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.08
265:					
Clarkelen	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Draknab	35	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.08
Boruff	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
266:					
Coaliams, moderately saline	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
267:					
Cromack	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Samsil	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
268:					
Decolney	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Hiland	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
269:					
Decolney	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Hiland	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
270:					
Deekay	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Deekay, stratified substratum	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
271:					
Delpoint------------	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cabbart-------------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
272:					
Delpoint------------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Yamacall------------	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cabbart-------------	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
273:					
Delpoint, wooded----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Yamacall, wooded----	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cabbart, wooded-----	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
274:					
Denied access-------	100	Not rated		Not rated	
275:					
Echeta--------------	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Moorhead------------	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
276:					
Elwop, wooded-------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mittenbutte, wooded-	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop--------	15	Not rated		Not rated	

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
277:					
Fairburn------------	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mittenbutte---------	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badland-------------	15	Not rated		Not rated	
278:					
Fairburn------------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Samsil--------------	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badland-------------	15	Not rated		Not rated	
279:					
Fairburn, wooded----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Samsil, wooded------	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badland-------------	15	Not rated		Not rated	
280:					
Felix---------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
281:					
Foreleft------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
282:					
Foreleft------------	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bonfri--------------	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
283:					
Gateson, wooded-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
283:(cont.)					
Xema, wooded	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mittenbutte, wooded	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
284:					
Haverdad	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
285:					
Haverdad	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Boruff	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
286:					
Havre	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bigsandy	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
287:					
Hiland	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bowbac	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
288:					
Hiland	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bowbac	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
289:					
Hiland	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bowbac	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
290:					
Hiland	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Decolney	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
291:					
Ironbutte, wooded	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Fairburn, wooded	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mittenbutte, wooded	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
292:					
Jaywest	45	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
Jaywest, stratified substratum	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
293:					
Jaywest, saline substratum	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cedar Butte	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Slickspots	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
294:					
Kirby, wooded	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cabbart, wooded	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Blacksheep, wooded	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
295:					
Lismas	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Sabatka	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Xema	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296:					
Megonot	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Yawdim	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297:					
Muleherder, wooded	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ironbutte, wooded	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
298:					
Nuncho	85	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
299:					
Oldwolf	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Fairburn	30	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
300:					
Oshoto	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Klinedraw	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
301:					
Oshoto	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
301:(cont.)					
Klinedraw	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
302:					
Oshoto	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Moorhead	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
303:					
Oshoto	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ziggy	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
304:					
Parmleed	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bidman	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
305:					
Pinehill	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
306:					
Pinehill	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Pylon	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
307:					
Pinehill, loam	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Pinehill, clay loam	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
308:					
Pinehill	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
308:(cont.)					
Pylon	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
309:					
Pitchdraw	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ashollow	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mittenbutte	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
310:					
Rockypoint	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
311:					
Rockypoint	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Boruff	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
312:					
Rockypoint	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Sodawells	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
313:					
Savageton	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Samday	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
314:					
Savageton	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Silhouette	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
315:					
Shingle	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Taluce	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badland	15	Not rated		Not rated	
316:					
Shingle, wooded	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Taluce, wooded	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badland	15	Not rated		Not rated	
317:					
Silhouette	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ulm	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
318:					
Sodawells	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Pathfinder	30	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.08
Boruff	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
319:					
Spottedhorse	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Leiter	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
320:					
Stetter	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
321:					
Swanboy	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cedar Butte	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Slickspots	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
322:					
Toby	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Twilight	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Blacksheep	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
323:					
Ucross	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Fairburn	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
324:					
Ucross	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Fairburn	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
325:					
Ucross, wooded	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Fairburn, wooded	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
326:					
Ucross, wooded	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
326:(cont.)					
Iwait, wooded	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Fairburn, wooded	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
327:					
Ulm	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bidman	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
328:					
Ulm	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
329:					
Ulm	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
330:					
Ulm	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
331:					
Valent	60	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.09
		Thickest layer	0.00	Bottom layer	0.10
Duneland	35	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.10
		Thickest layer	0.00	Thickest layer	0.10
332:					
Vanstel	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Pinehill	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
333:					
Vonalee	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Terro	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
333:(cont.)					
Taluce	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
334:					
Vonalf	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Xema	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mittenbutte	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
335:					
Wibaux	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Shingle	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Taluce	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
336:					
Wibaux, wooded	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Shingle, wooded	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Taluce, wooded	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
337:					
Winler	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Twotop	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
338:					
Zigweid	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
338:(cont.)					
Cambria	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
339:					
Zigweid	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kishona	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cambria	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Reclamation Material, Roadfill, and Topsoil

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
103:							
Arwite	85	Fair		Good		Good	
		Low content of organic matter	0.12				
105:							
Arwite	50	Fair		Good		Good	
		Low content of organic matter	0.12				
Elwop	30	Fair		Poor		Fair	
		Droughty	0.85	Depth to bedrock	0.00	Depth to bedrock	0.90
		Low content of organic matter	0.88	Shrink-swell	0.99		
		Depth to bedrock	0.90				
106:							
Arwite	45	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.96
Elwop	35	Fair		Poor		Fair	
		Droughty	0.85	Depth to bedrock	0.00	Slope	0.63
		Low content of organic matter	0.88	Shrink-swell	0.99	Depth to bedrock	0.90
		Depth to bedrock	0.90				
107:							
Arwite	45	Fair		Good		Good	
		Low content of organic matter	0.12				
Vonalf	35	Fair		Good		Good	
		Low content of organic matter	0.88				
122:							
Cushman	50	Fair		Poor		Fair	
		Depth to bedrock	0.54	Depth to bedrock	0.00	Depth to bedrock	0.54
		Low content of organic matter	0.88	Low strength	0.00	Slope	0.63
				Shrink-swell	0.99		
		Droughty	0.99				
		Water erosion	0.99				
Cambria	30	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Slope	0.96

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
131:							
Deekay	80	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too clayey	0.66
		Too clayey	0.92				
		Water erosion	0.99				
132:							
Deekay	50	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too clayey	0.66
		Too clayey	0.92				
		Water erosion	0.99				
Moorhead	35	Fair		Poor		Fair	
		Too clayey	0.08	Low strength	0.00	Too clayey	0.06
		Low content of organic matter	0.88	Shrink-swell	0.49		
		Water erosion	0.99				
133:							
Deekay	45	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too clayey	0.66
						Slope	0.96
		Too clayey	0.92				
		Water erosion	0.99				
Moorhead	40	Fair		Poor		Fair	
		Too clayey	0.08	Low strength	0.00	Too clayey	0.06
		Low content of organic matter	0.88	Shrink-swell	0.49	Slope	0.96
		Water erosion	0.99				
134:							
Deekay	50	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too clayey	0.66
		Too clayey	0.92				
		Water erosion	0.99				
Oldwolf	30	Fair		Poor		Fair	
		Depth to bedrock	0.71	Depth to bedrock	0.00	Too clayey	0.66
		Low content of organic matter	0.88	Low strength	0.22	Depth to bedrock	0.71
		Too clayey	0.92				
		Water erosion	0.99				
135:							
Deekay	50	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too clayey	0.66
						Slope	0.96
		Too clayey	0.92				
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
135:(cont.)							
Oldwolf	30	Fair		Poor		Fair	
		Depth to bedrock	0.71	Depth to bedrock	0.00	Slope	0.63
		Low content of organic matter	0.88	Low strength	0.22	Too clayey	0.66
		Too clayey	0.92			Depth to bedrock	0.71
		Water erosion	0.99				
136:							
Deekay	50	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too clayey	0.66
		Too clayey	0.92				
		Water erosion	0.99				
Ziggy	30	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.99	Shrink-swell	0.91		
137:							
Echeta	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.12		
		Water erosion	0.99				
138:							
Echeta	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.12	Slope	0.96
		Water erosion	0.99				
Cromack	35	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Low strength	0.00	Depth to bedrock	0.46
		Depth to bedrock	0.46	Shrink-swell	0.12	Slope	0.63
		Droughty	0.61				
		Water erosion	0.99				
144:							
Forkwood	80	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too clayey	0.66
		Too clayey	0.92				
		Water erosion	0.99				
146:							
Forkwood	50	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too clayey	0.66
		Too clayey	0.92				
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
146:(cont.)							
Cushman	30	Fair		Poor		Fair	
		Depth to bedrock	0.54	Depth to bedrock	0.00	Depth to bedrock	0.54
		Low content of organic matter	0.88	Low strength	0.00		
				Shrink-swell	0.99		
		Droughty	0.99				
		Water erosion	0.99				
147:							
Forkwood	50	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too clayey	0.66
						Slope	0.96
		Too clayey	0.92				
		Water erosion	0.99				
Cushman	30	Fair		Poor		Fair	
		Depth to bedrock	0.54	Depth to bedrock	0.00	Depth to bedrock	0.54
		Low content of organic matter	0.88	Low strength	0.00	Slope	0.63
				Shrink-swell	0.99		
		Droughty	0.99				
		Water erosion	0.99				
148:							
Forkwood	50	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too clayey	0.66
		Too clayey	0.92				
		Water erosion	0.99				
Ulm	35	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.72		
		Water erosion	0.99				
149:							
Forkwood	55	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too clayey	0.66
						Slope	0.96
		Too clayey	0.92				
		Water erosion	0.99				
Ulm	30	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.72	Slope	0.96
		Water erosion	0.99				
151:							
Haverdad	80	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
155:							
Heldt, saline	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Salinity	0.00
		Low content of organic matter	0.12	Shrink-swell	0.12	Too clayey	0.00
		Salinity	0.50			Sodium content	0.78
		Sodium content	0.78				
		Water erosion	0.99				
Bidman, saline	35	Fair		Poor		Poor	
		Low content of organic matter	0.12	Low strength	0.00	Salinity	0.00
		Too clayey	0.50	Shrink-swell	0.12	Too clayey	0.29
		Salinity	0.50	Shrink-swell	0.12	Sodium content	0.60
		Sodium content	0.60				
		Water erosion	0.99				
162:							
Lismas	30	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.00	Shrink-swell	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.12	Slope	0.50		
		Water erosion	0.99				
Mittenbutte, cool	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.08	Slope	0.00
		Low content of organic matter	0.12				
Sabatka	20	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Depth to bedrock	0.54	Low strength	0.00	Slope	0.00
		Droughty	0.64	Shrink-swell	0.12	Depth to bedrock	0.54
		Low content of organic matter	0.88	Slope	0.82		
		Water erosion	0.99				
164:							
Lismas	35	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.00	Shrink-swell	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.12	Slope	0.50		
		Water erosion	0.99				
Sabatka	30	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Depth to bedrock	0.54	Low strength	0.00	Slope	0.00
		Droughty	0.64	Shrink-swell	0.12	Depth to bedrock	0.54
		Low content of organic matter	0.88	Slope	0.92		
		Water erosion	0.99				
Badland	10	Not rated		Not rated		Not rated	

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
166:							
Jaywest	80	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.88	Shrink-swell	0.47		
		Water erosion	0.99				
167:							
Jaywest	40	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.88	Shrink-swell	0.47		
		Water erosion	0.99				
Moorhead	40	Fair		Poor		Fair	
		Too clayey	0.08	Low strength	0.00	Too clayey	0.06
		Low content of organic matter	0.88	Shrink-swell	0.49		
		Water erosion	0.99				
168:							
Jaywest	50	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.88	Shrink-swell	0.47		
		Water erosion	0.99				
Spottedhorse	30	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Low content of organic matter	0.50	Low strength	0.00	Depth to bedrock	0.90
				Shrink-swell	0.12		
		Depth to bedrock	0.90				
		Droughty	0.99				
		Water erosion	0.99				
170:							
Keeline	40	Poor		Good		Fair	
		Wind erosion	0.00			Slope	0.84
		Low content of organic matter	0.12				
Tullock	40	Poor		Poor		Poor	
		Too sandy	0.00	Depth to bedrock	0.00	Too sandy	0.00
		Wind erosion	0.00			Slope	0.00
		Droughty	0.00			Depth to bedrock	0.35
		Low content of organic matter	0.12				
		Depth to bedrock	0.35				
174:							
Brislawn	30	Poor		Fair		Poor	
		Low content of organic matter	0.00	Shrink-swell	0.93	Hard to reclaim, rock fragments	0.00
		Too clayey	0.00			Too clayey	0.00
		Water erosion	0.99				
		Cobble content	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
174:(cont.)							
Rockybutte----------	30	Poor		Good		Poor	
		Low content of organic matter	0.00			Hard to reclaim, rock fragments	0.00
		Too clayey	0.92			Too clayey	0.66
		Droughty	0.97				
		Water erosion	0.99				
		Cobble content	0.99				
Ironbutte-----------	20	Poor		Poor		Poor	
		Too sandy	0.00	Cobble content	0.00	Too sandy	0.00
		Droughty	0.00	Stone content	0.89	Hard to reclaim, rock fragments	0.00
		Cobble content	0.00				
		Low content of organic matter	0.12			Rock fragments	0.00
		Stone content	0.78				
176:							
Leiter--------------	50	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Depth to bedrock	0.79	Low strength	0.00	Depth to bedrock	0.79
		Low content of organic matter	0.88	Shrink-swell	0.47		
		Droughty	0.99				
		Water erosion	0.99				
Cromack-------------	30	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Low strength	0.00	Depth to bedrock	0.46
				Shrink-swell	0.12		
		Depth to bedrock	0.46				
		Droughty	0.61				
		Water erosion	0.99				
181:							
Moorhead------------	80	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.69		
		Water erosion	0.99				
182:							
Moorhead------------	85	Fair		Poor		Fair	
		Too clayey	0.08	Low strength	0.00	Too clayey	0.06
		Low content of organic matter	0.12	Shrink-swell	0.67		
		Water erosion	0.99				
183:							
Moorhead------------	50	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.69		
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
183:(cont.)							
Leiter--------------	30	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Depth to bedrock	0.79	Low strength	0.00	Depth to bedrock	0.79
		Low content of organic matter	0.88	Shrink-swell	0.47		
		Droughty	0.99				
		Water erosion	0.99				
184:							
Moorhead------------	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.69	Slope	0.96
		Water erosion	0.99				
Leiter--------------	35	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Depth to bedrock	0.79	Depth to bedrock	0.00	Slope	0.63
		Low content of organic matter	0.88	Shrink-swell	0.47	Depth to bedrock	0.79
		Droughty	0.99				
		Water erosion	0.99				
185:							
Moskee--------------	85	Fair		Good		Good	
		Low content of organic matter	0.12				
187:							
Nuncho--------------	80	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.66		
		Water erosion	0.99				
191:							
Pits----------------	60	Not rated		Not rated		Not rated	
Dumps---------------	40	Not rated		Not rated		Not rated	
192:							
Platmak-------------	80	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.12		
		Water erosion	0.99				
198:							
Recluse-------------	80	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too clayey	0.80
		Too clayey	0.92				
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
203:							
Rockypoint	45	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Salinity	0.50
		Water erosion	0.99				
Iwait	35	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.99	Shrink-swell	0.87		
204:							
Samday	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Too clayey	0.00
		Too clayey	0.00	Slope	0.08	Slope	0.00
		Low content of organic matter	0.12	Shrink-swell	0.12		
		Water erosion	0.99				
Samday, cool	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.08	Too clayey	0.00
		Too clayey	0.00			Slope	0.00
		Low content of organic matter	0.12				
		Water erosion	0.99				
Shingle	20	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.02	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.12	Slope	0.08		
				Shrink-swell	0.87		
		Water erosion	0.99				
206:							
Samday	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Too clayey	0.00
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Shrink-swell	0.12		
		Water erosion	0.99				
Shingle	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Low strength	0.22		
		Water erosion	0.99				
Badland	15	Not rated		Not rated		Not rated	

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
207:							
Cromack	30	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Low strength	0.00	Depth to bedrock	0.46
		Depth to bedrock	0.46	Shrink-swell	0.12	Slope	0.96
		Droughty	0.61				
		Water erosion	0.99				
Fairburn	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.37
		Low content of organic matter	0.12				
		Water erosion	0.99				
Ucross	25	Fair		Poor		Fair	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.37
		Depth to bedrock	0.65	Low strength	0.00	Depth to bedrock	0.65
		Water erosion	0.99	Shrink-swell	0.87		
210:							
Shingle	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.92		
		Water erosion	0.99				
Taluce	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.92	Slope	0.00
		Low content of organic matter	0.12				
215:							
Theedle	45	Fair		Poor		Fair	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.16
		Depth to bedrock	0.93	Low strength	0.00	Depth to bedrock	0.93
		Droughty	0.97	Shrink-swell	0.99		
		Water erosion	0.99				
Kishona	30	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.96
		Water erosion	0.99	Shrink-swell	0.87		
216:							
Theedle	40	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.35	Low strength	0.00	Depth to bedrock	0.35
		Droughty	0.97	Shrink-swell	0.87		
		Water erosion	0.99	Slope	0.92		

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
216:(cont.)							
Kishona	20	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.96
		Water erosion	0.99	Shrink-swell	0.87		
Shingle	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.82		
		Water erosion	0.99				
217:							
Theedle	50	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.35	Low strength	0.00	Depth to bedrock	0.35
		Droughty	0.97	Shrink-swell	0.87		
		Water erosion	0.99	Slope	0.92		
Shingle	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.92		
		Water erosion	0.99				
219:							
Torriarents	50	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.84
		Water erosion	0.90	Shrink-swell	0.87		
Torriorthents	50	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.84
		Water erosion	0.90	Shrink-swell	0.87		
220:							
Pitchdraw	35	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.45			Depth to bedrock	0.65
		Depth to bedrock	0.65				
Ashollow	25	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.96
Niobrara	20	Poor		Poor		Poor	
		Too sandy	0.00	Depth to bedrock	0.00	Too sandy	0.00
		Wind erosion	0.00	Slope	0.50	Depth to bedrock	0.00
		Droughty	0.00			Slope	0.00
		Depth to bedrock	0.00				
		Low content of organic matter	0.12				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
221:							
Turnercrest----------	35	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.52			Depth to bedrock	0.71
		Depth to bedrock	0.71				
Keeline-------------	30	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.84
Taluce--------------	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.50	Slope	0.00
		Low content of organic matter	0.50				
223:							
Ucross--------------	80	Fair		Poor		Fair	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Depth to bedrock	0.65
				Low strength	0.00		
		Depth to bedrock	0.65	Shrink-swell	0.87		
		Water erosion	0.99				
224:							
Ucross--------------	50	Fair		Poor		Fair	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Depth to bedrock	0.65
				Low strength	0.00		
		Depth to bedrock	0.65	Shrink-swell	0.87		
		Water erosion	0.99				
Iwait---------------	30	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
				Shrink-swell	0.87		
		Water erosion	0.99				
225:							
Ucross--------------	35	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
				Low strength	0.00	Depth to bedrock	0.65
		Depth to bedrock	0.65	Shrink-swell	0.87		
		Water erosion	0.99				
Iwait---------------	25	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.96
				Shrink-swell	0.87		
		Water erosion	0.99				
Fairburn------------	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.82		
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
228:							
Ulm	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.67		
		Water erosion	0.99				
Renohill	40	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Low content of organic matter	0.88	Low strength	0.00	Depth to bedrock	0.90
		Depth to bedrock	0.90	Shrink-swell	0.44		
		Water erosion	0.99				
229:							
Ulm	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.67		
		Water erosion	0.99				
Renohill	35	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Low content of organic matter	0.88	Low strength	0.00	Slope	0.63
				Shrink-swell	0.44	Depth to bedrock	0.90
		Depth to bedrock	0.90				
		Water erosion	0.99				
233:							
Ustic Torriorthents, gullied	90	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
				Slope	0.02	Depth to bedrock	0.90
		Depth to bedrock	0.90				
234:							
Ustic Torriorthents	65	Fair		Not rated		Poor	
		Low content of organic matter	0.12			Slope	0.00
						Depth to bedrock	0.90
		Depth to bedrock	0.90				
Badland	20	Not rated		Not rated		Not rated	
236:							
Vonalee	50	Fair		Good		Good	
		Low content of organic matter	0.12				
Terro	30	Fair		Poor		Fair	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Depth to bedrock	0.54
		Droughty	0.35				
		Depth to bedrock	0.54				
238:							
Vonalf	50	Fair		Good		Good	
		Low content of organic matter	0.88				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
238:(cont.)							
Xema	30	Fair		Poor		Fair	
		Droughty	0.45	Depth to bedrock	0.00	Depth to bedrock	0.65
		Depth to bedrock	0.65				
		Low content of organic matter	0.88				
239:							
Ironbutte	30	Poor		Poor		Poor	
		Too sandy	0.00	Cobble content	0.00	Too sandy	0.00
		Droughty	0.00	Slope	0.08	Hard to reclaim, rock fragments	0.00
		Cobble content	0.00	Stone content	0.89	Rock fragments	0.00
		Low content of organic matter	0.12			Slope	0.00
		Stone content	0.78				
Fairburn	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.08	Slope	0.00
		Low content of organic matter	0.12	Low strength	0.22		
		Water erosion	0.99				
Mittenbutte	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.08	Slope	0.00
		Low content of organic matter	0.12				
241:							
Ironbutte	55	Poor		Poor		Poor	
		Too sandy	0.00	Cobble content	0.00	Too sandy	0.00
		Droughty	0.00	Slope	0.08	Hard to reclaim, rock fragments	0.00
		Cobble content	0.00	Stone content	0.89	Rock fragments	0.00
		Low content of organic matter	0.12			Slope	0.00
		Stone content	0.78				
Ironbutte, thin solum	30	Poor		Poor		Poor	
		Too sandy	0.00	Cobble content	0.00	Too sandy	0.00
		Cobble content	0.00	Slope	0.08	Hard to reclaim, rock fragments	0.00
		Droughty	0.00	Stone content	0.83	Rock fragments	0.00
		Low content of organic matter	0.12			Slope	0.00
		Stone content	0.74				
244:							
Muleherder	45	Poor		Fair		Poor	
		Low content of organic matter	0.00	Slope	0.92	Hard to reclaim, rock fragments	0.00
		Droughty	0.05	Cobble content	0.99	Rock fragments	0.00
		Cobble content	0.79			Slope	0.00
		Stone content	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
244:(cont.)							
Ironbutte	40	Poor		Poor		Poor	
		Too sandy	0.00	Cobble content	0.00	Too sandy	0.00
		Droughty	0.00	Slope	0.08	Hard to reclaim, rock fragments	0.00
		Cobble content	0.00	Stone content	0.89	Rock fragments	0.00
		Low content of organic matter	0.00			Slope	0.00
		Stone content	0.78				
248:							
Ziggy	50	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.99	Shrink-swell	0.91		
Iwait	30	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.99	Shrink-swell	0.87		
249:							
Ziggy	50	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.99	Shrink-swell	0.91		
Iwait	30	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.99	Shrink-swell	0.87		
250:							
Ziggy	35	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.99	Shrink-swell	0.91		
Ucross	30	Fair		Poor		Fair	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.63
				Low strength	0.00	Depth to bedrock	0.65
		Depth to bedrock	0.65	Shrink-swell	0.87		
		Water erosion	0.99				
Oldwolf	20	Fair		Poor		Fair	
		Depth to bedrock	0.71	Depth to bedrock	0.00	Slope	0.63
		Low content of organic matter	0.88	Low strength	0.22	Too clayey	0.66
						Depth to bedrock	0.71
		Too clayey	0.92				
		Water erosion	0.99				
251:							
Water	100	Not rated		Not rated		Not rated	

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
252:							
Absted	45	Poor		Poor		Poor	
		Sodium content	0.00	Low strength	0.00	Salinity	0.00
		Too alkaline	0.00	Shrink-swell	0.12	Sodium content	0.00
		Low content of organic matter	0.12			Too clayey	0.29
		Too clayey	0.50				
		Salinity	0.88				
		Water erosion	0.99				
Slickspots	35	Poor		Not rated		Poor	
		Too alkaline	0.00			Sodium content	0.00
		Sodium content	0.00			Salinity	0.00
		Salinity	0.00			Too clayey	0.05
		Too clayey	0.08				
		Low content of organic matter	0.50				
253:							
Absted	30	Poor		Poor		Poor	
		Sodium content	0.00	Low strength	0.00	Salinity	0.00
		Too alkaline	0.00	Shrink-swell	0.12	Sodium content	0.00
		Low content of organic matter	0.12			Too clayey	0.29
		Too clayey	0.50				
		Salinity	0.50				
		Water erosion	0.99				
Arvada	30	Poor		Poor		Poor	
		Sodium content	0.00	Low strength	0.00	Salinity	0.00
		Too alkaline	0.00	Shrink-swell	0.12	Sodium content	0.00
		Too clayey	0.50			Too clayey	0.33
		Low content of organic matter	0.50				
		Salinity	0.50				
		Water erosion	0.99				
Slickspots	20	Poor		Not rated		Poor	
		Sodium content	0.00			Sodium content	0.00
		Too alkaline	0.00			Salinity	0.00
		Too clayey	0.00			Too clayey	0.00
		Salinity	0.00				
		Low content of organic matter	0.50				
254:							
Badland	50	Not rated		Not rated		Not rated	
Lismas	35	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Shrink-swell	0.00	Too clayey	0.00
		Depth to bedrock	0.00	Low strength	0.00	Depth to bedrock	0.00
		Low content of organic matter	0.12	Slope	0.00		
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
255:							
Bidman	45	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.29
		Too clayey	0.50	Shrink-swell	0.12		
		Water erosion	0.99				
Parmleed	35	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Low content of organic matter	0.88	Low strength	0.00	Depth to bedrock	0.97
		Depth to bedrock	0.97	Shrink-swell	0.12		
		Water erosion	0.99				
256:							
Bidman	55	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.99	Shrink-swell	0.66		
Ulm	35	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.19
		Too clayey	0.32	Shrink-swell	0.12		
		Water erosion	0.99				
257:							
Bonfri, deep	50	Fair		Fair		Good	
		Low content of organic matter	0.12	Depth to bedrock	0.99		
Bonfri	30	Fair		Poor		Fair	
		Droughty	0.37	Depth to bedrock	0.00	Depth to bedrock	0.46
		Depth to bedrock	0.46				
		Low content of organic matter	0.88				
258:							
Bonfri	50	Fair		Poor		Fair	
		Depth to bedrock	0.71	Depth to bedrock	0.00	Depth to bedrock	0.71
		Low content of organic matter	0.88	Low strength	0.00		
		Water erosion	0.99	Shrink-swell	0.99		
Kirby	35	Poor		Poor		Poor	
		Too sandy	0.00	Cobble content	0.00	Too sandy	0.00
		Droughty	0.00	Stone content	0.96	Hard to reclaim, rock fragments	0.00
		Cobble content	0.02			Rock fragments	0.00
		Low content of organic matter	0.12				
		Stone content	0.87				
259:							
Bonfri	40	Fair		Poor		Fair	
		Droughty	0.34	Depth to bedrock	0.00	Depth to bedrock	0.54
		Depth to bedrock	0.54	Low strength	0.22	Slope	0.84
		Too acid	0.84				
		Low content of organic matter	0.88				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
259:(cont.)							
Twilight------------	30	Fair		Poor		Poor	
		Droughty	0.21	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.46			Depth to bedrock	0.46
		Too acid	0.84				
		Low content of organic matter	0.88				
Blacksheep----------	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.50	Slope	0.00
		Low content of organic matter	0.12				
		Too acid	0.84				
260:							
Cabbart, wooded-----	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Low strength	0.22		
		Too acid	0.84				
		Water erosion	0.99				
Volborg, wooded-----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Too clayey	0.00
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Shrink-swell	0.12		
		Too acid	0.84				
		Water erosion	0.99				
Badland-------------	15	Not rated		Not rated		Not rated	
261:							
Cabbart-------------	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.50		
		Water erosion	0.99				
Yawdim--------------	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Too clayey	0.00
		Too clayey	0.00	Shrink-swell	0.12	Slope	0.00
		Low content of organic matter	0.12	Slope	0.50		
		Water erosion	0.99				
Badland-------------	15	Not rated		Not rated		Not rated	
262:							
Cambria-------------	30	Fair		Fair		Good	
		Low content of organic matter	0.12	Low strength	0.22		
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
262:(cont.)							
Kishona	30	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.99	Shrink-swell	0.87		
Zigweid	25	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.99	Shrink-swell	0.87		
263:							
Cedar Butte	65	Poor		Poor		Poor	
		Sodium content	0.00	Low strength	0.00	Salinity	0.00
		Too alkaline	0.00	Shrink-swell	0.12	Sodium content	0.00
		Low content of organic matter	0.12			Too clayey	0.29
		Too clayey	0.50				
		Salinity	0.50				
		Water erosion	0.99				
		Too acid	0.99				
Slickspots	20	Poor		Not rated		Poor	
		Sodium content	0.00			Sodium content	0.00
		Too alkaline	0.00			Salinity	0.00
		Too clayey	0.00			Too clayey	0.00
		Salinity	0.00				
		Low content of organic matter	0.50				
264:							
Clarkelen	50	Fair		Good		Good	
		Low content of organic matter	0.12				
Draknab	40	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12				
		Droughty	0.98				
265:							
Clarkelen	45	Fair		Good		Good	
		Low content of organic matter	0.12				
Draknab	35	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12				
		Droughty	0.98				
Boruff	15	Poor		Poor		Poor	
		Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.00
		Sodium content	0.97	Shrink-swell	0.12	Salinity	0.50
						Sodium content	0.98

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
266:							
Coaliams, moderately saline	90	Fair		Fair		Poor	
		Low content of organic matter	0.12	Low strength	0.22	Salinity	0.00
		Salinity	0.50			Too clayey	0.87
		Too clayey	0.92			Sodium content	0.98
		Sodium content	0.97				
		Water erosion	0.99				
267:							
Cromack	45	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Low strength	0.00	Depth to bedrock	0.46
		Depth to bedrock	0.46	Shrink-swell	0.12		
		Droughty	0.61				
		Water erosion	0.99				
Samsil	35	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Too clayey	0.00
		Droughty	0.00	Shrink-swell	0.12		
		Low content of organic matter	0.12				
		Water erosion	0.99				
268:							
Decolney	45	Fair		Good		Good	
		Low content of organic matter	0.12				
Hiland	40	Fair		Good		Good	
		Low content of organic matter	0.12				
269:							
Decolney	40	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.96
Hiland	40	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.96
270:							
Deekay	40	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too clayey	0.66
		Too clayey	0.92				
		Water erosion	0.99				
Deekay, stratified substratum	40	Fair		Fair		Good	
		Low content of organic matter	0.12	Low strength	0.22		
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
271:							
Delpoint	45	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.79	Low strength	0.00	Depth to bedrock	0.79
		Water erosion	0.99	Shrink-swell	0.87		
Cabbart	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.50		
		Water erosion	0.99				
272:							
Delpoint	35	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.79	Low strength	0.00	Depth to bedrock	0.79
		Water erosion	0.99	Shrink-swell	0.87		
Yamacall	25	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Slope	0.84
		Water erosion	0.99				
Cabbart	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.50		
		Water erosion	0.99				
273:							
Delpoint, wooded	35	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.84	Low strength	0.00	Depth to bedrock	0.84
		Too acid	0.84	Shrink-swell	0.87		
Yamacall, wooded	25	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Slope	0.84
		Too acid	0.84				
Cabbart, wooded	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.50		
		Too acid	0.84				
		Water erosion	0.99				
274:							
Denied access	100	Not rated		Not rated		Not rated	

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
275:							
Echeta	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.12		
		Water erosion	0.99				
Moorhead	40	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.69		
		Water erosion	0.99				
276:							
Elwop, wooded	35	Fair		Poor		Fair	
		Droughty	0.79	Depth to bedrock	0.00	Slope	0.84
		Too acid	0.84	Shrink-swell	0.99	Depth to bedrock	0.90
		Low content of organic matter	0.88				
		Depth to bedrock	0.90				
Mittenbutte, wooded	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12				
		Too acid	0.84				
Rock outcrop	15	Not rated		Not rated		Not rated	
277:							
Fairburn	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Low strength	0.22		
		Water erosion	0.99				
Mittenbutte	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12				
Badland	15	Not rated		Not rated		Not rated	
278:							
Fairburn	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.50		
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
278:(cont.)							
Samsil	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Too clayey	0.00
		Too clayey	0.00	Shrink-swell	0.12	Slope	0.00
		Low content of organic matter	0.12	Slope	0.50		
		Water erosion	0.99				
Badland	15	Not rated		Not rated		Not rated	
279:							
Fairburn, wooded	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.82		
		Too acid	0.84				
Samsil, wooded	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Too clayey	0.00
		Too clayey	0.00	Shrink-swell	0.12	Slope	0.00
		Low content of organic matter	0.12	Slope	0.82		
		Too acid	0.84				
		Water erosion	0.99				
Badland	15	Not rated		Not rated		Not rated	
280:							
Felix	85	Poor		Poor		Poor	
		Too clayey	0.00	Depth to saturated zone	0.00	Too clayey	0.00
		Low content of organic matter	0.88	Shrink-swell	0.00	Depth to saturated zone	0.00
		Water erosion	0.99	Low strength	0.00		
281:							
Foreleft	80	Fair		Fair		Good	
		Low content of organic matter	0.12	Low strength	0.22		
		Water erosion	0.99				
282:							
Foreleft	50	Fair		Fair		Good	
		Low content of organic matter	0.12	Low strength	0.22		
		Water erosion	0.99				
Bonfri	30	Fair		Poor		Fair	
		Depth to bedrock	0.71	Depth to bedrock	0.00	Depth to bedrock	0.71
		Low content of organic matter	0.88	Low strength	0.00		
		Water erosion	0.99	Shrink-swell	0.99		

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
283:							
Gateson, wooded-----	40	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.84			Depth to bedrock	0.97
		Droughty	0.85				
		Depth to bedrock	0.97				
Xema, wooded--------	25	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.84			Depth to bedrock	0.99
		Droughty	0.88				
		Depth to bedrock	0.99				
Mittenbutte, wooded-	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.50	Slope	0.00
		Low content of organic matter	0.12				
		Too acid	0.84				
284:							
Haverdad------------	85	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
				Shrink-swell	0.87		
		Water erosion	0.99				
285:							
Haverdad------------	50	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.78	Salinity	0.50
		Water erosion	0.99				
Boruff--------------	40	Poor		Poor		Poor	
		Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Low content of organic matter	0.12				
				Low strength	0.00	Too clayey	0.00
		Sodium content	0.22	Shrink-swell	0.12	Sodium content	0.22
		Water erosion	0.99			Salinity	0.50
286:							
Havre---------------	50	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Salinity	0.50
		Water erosion	0.99				
Bigsandy------------	35	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Water erosion	0.99	Low strength	0.22	Salinity	0.50
				Shrink-swell	0.87		
287:							
Hiland--------------	45	Fair		Good		Good	
		Low content of organic matter	0.12				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
287:(cont.)							
Bowbac--------------	30	Fair		Poor		Fair	
		Droughty	0.05	Depth to bedrock	0.00	Depth to bedrock	0.10
		Depth to bedrock	0.10			Slope	0.84
		Low content of organic matter	0.88				
288:							
Hiland--------------	50	Fair		Good		Good	
		Low content of organic matter	0.12				
Bowbac--------------	30	Fair		Poor		Fair	
		Low content of organic matter	0.88	Depth to bedrock	0.00	Depth to bedrock	0.99
				Low strength	0.22		
		Droughty	0.99	Shrink-swell	0.97		
		Depth to bedrock	0.99				
289:							
Hiland--------------	45	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.96
Bowbac--------------	35	Fair		Poor		Fair	
		Low content of organic matter	0.88	Depth to bedrock	0.00	Slope	0.63
				Low strength	0.22	Depth to bedrock	0.99
		Droughty	0.99				
		Depth to bedrock	0.99				
290:							
Hiland--------------	50	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.96
Decolney------------	35	Poor		Good		Fair	
		Wind erosion	0.00			Slope	0.96
		Low content of organic matter	0.12				
291:							
Ironbutte, wooded---	35	Poor		Poor		Poor	
		Too sandy	0.00	Cobble content	0.00	Too sandy	0.00
		Droughty	0.00	Slope	0.00	Hard to reclaim, rock fragments	0.00
		Cobble content	0.00	Stone content	0.91		
		Low content of organic matter	0.12			Rock fragments	0.00
						Slope	0.00
		Stone content	0.81				
		Too acid	0.84				
Fairburn, wooded----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.50		
		Too acid	0.84				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
291:(cont.)							
Mittenbutte, wooded-	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.50	Slope	0.00
		Low content of organic matter	0.12				
		Too acid	0.84				
292:							
Jaywest-------------	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.88	Shrink-swell	0.47		
		Water erosion	0.99				
Jaywest, stratified substratum---------	40	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12				
		Water erosion	0.99				
293:							
Jaywest, saline substratum---------	40	Poor		Poor		Poor	
		Sodium content	0.00	Low strength	0.00	Salinity	0.00
		Too clayey	0.00	Shrink-swell	0.59	Sodium content	0.00
		Too alkaline	0.00			Too clayey	0.00
		Low content of organic matter	0.12				
		Salinity	0.50				
		Water erosion	0.99				
Cedar Butte---------	30	Poor		Poor		Poor	
		Sodium content	0.00	Low strength	0.00	Salinity	0.00
		Too alkaline	0.00	Shrink-swell	0.12	Sodium content	0.00
		Low content of organic matter	0.12			Too clayey	0.29
		Too clayey	0.50				
		Salinity	0.50				
		Water erosion	0.99				
		Too acid	0.99				
Slickspots----------	15	Poor		Not rated		Poor	
		Sodium content	0.00			Sodium content	0.00
		Too alkaline	0.00			Salinity	0.00
		Too clayey	0.00			Too clayey	0.00
		Salinity	0.00				
		Low content of organic matter	0.50				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
294:							
Kirby, wooded	40	Poor		Poor		Poor	
		Too sandy	0.00	Cobble content	0.00	Too sandy	0.00
		Droughty	0.00	Slope	0.00	Hard to reclaim, rock fragments	0.00
		Cobble content	0.04	Stone content	0.98	Rock fragments	0.00
		Low content of organic matter	0.12			Slope	0.00
		Too acid	0.84				
		Stone content	0.89				
Cabbart, wooded	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.50		
		Too acid	0.84				
		Water erosion	0.99				
Blacksheep, wooded	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.50	Slope	0.00
		Low content of organic matter	0.12				
		Too acid	0.84				
295:							
Lismas	40	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.00	Shrink-swell	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Slope	0.84
		Low content of organic matter	0.12				
		Water erosion	0.99				
Sabatka	30	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Depth to bedrock	0.54	Low strength	0.00	Depth to bedrock	0.54
		Droughty	0.64	Shrink-swell	0.12	Slope	0.84
		Low content of organic matter	0.88				
		Water erosion	0.99				
Xema	15	Fair		Poor		Fair	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Depth to bedrock	0.79
		Droughty	0.63				
		Depth to bedrock	0.79				
296:							
Megonot	50	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Low strength	0.00	Depth to bedrock	0.79
		Depth to bedrock	0.79	Shrink-swell	0.12		
		Droughty	0.86				
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
296:(cont.)							
Yawdim--------------	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Too clayey	0.00
		Too clayey	0.00	Shrink-swell	0.12	Slope	0.84
		Low content of organic matter	0.12				
		Water erosion	0.99				
297:							
Muleherder, wooded--	45	Poor		Fair		Poor	
		Low content of organic matter	0.00	Slope	0.50	Hard to reclaim, rock fragments	0.00
		Droughty	0.04			Rock fragments	0.00
		Cobble content	0.83			Slope	0.00
		Too acid	0.84				
		Stone content	0.99				
Ironbutte, wooded---	40	Poor		Poor		Poor	
		Too sandy	0.00	Cobble content	0.00	Too sandy	0.00
		Droughty	0.00	Slope	0.00	Hard to reclaim, rock fragments	0.00
		Cobble content	0.00	Stone content	0.91		
		Low content of organic matter	0.12			Rock fragments	0.00
						Slope	0.00
		Stone content	0.81				
		Too acid	0.84				
298:							
Nuncho--------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.12		
		Water erosion	0.99				
299:							
Oldwolf-------------	50	Fair		Poor		Fair	
		Depth to bedrock	0.71	Depth to bedrock	0.00	Too clayey	0.66
		Low content of organic matter	0.88	Low strength	0.22	Depth to bedrock	0.71
		Too clayey	0.92				
		Water erosion	0.99				
Fairburn------------	30	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00	Low strength	0.22		
		Low content of organic matter	0.12				
		Water erosion	0.99				
300:							
Oshoto--------------	50	Fair		Good		Fair	
		Low content of organic matter	0.12			Too clayey	0.66
		Too clayey	0.92				
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
300:(cont.)							
Klinedraw	35	Fair		Poor		Fair	
		Depth to bedrock	0.71	Depth to bedrock	0.00	Too clayey	0.66
		Low content of organic matter	0.88	Low strength	0.00	Depth to bedrock	0.71
				Shrink-swell	0.99		
		Too clayey	0.92				
		Water erosion	0.99				
301:							
Oshoto	45	Fair		Good		Fair	
		Low content of organic matter	0.12			Too clayey	0.66
		Too clayey	0.92				
		Water erosion	0.99				
Klinedraw	35	Fair		Poor		Fair	
		Depth to bedrock	0.71	Depth to bedrock	0.00	Too clayey	0.66
		Low content of organic matter	0.88	Low strength	0.00	Depth to bedrock	0.71
				Shrink-swell	0.99	Slope	0.84
		Too clayey	0.92				
		Water erosion	0.99				
302:							
Oshoto	50	Fair		Good		Fair	
		Low content of organic matter	0.12			Too clayey	0.66
		Too clayey	0.92				
		Water erosion	0.99				
Moorhead	30	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.69		
		Water erosion	0.99				
303:							
Oshoto	50	Fair		Good		Fair	
		Low content of organic matter	0.12			Too clayey	0.66
		Too clayey	0.92				
		Water erosion	0.99				
Ziggy	35	Fair		Good		Good	
		Low content of organic matter	0.12				
		Water erosion	0.99				
304:							
Parmleed	40	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Depth to bedrock	0.54	Low strength	0.00	Depth to bedrock	0.54
		Low content of organic matter	0.88	Shrink-swell	0.12		
		Water erosion	0.90				
		Droughty	0.92				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
304:(cont)							
Bidman	30	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.67		
		Water erosion	0.99				
305:							
Pinehill	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.56		
		Water erosion	0.99				
306:							
Pinehill	50	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.56		
		Water erosion	0.99				
Pylon	35	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Depth to bedrock	0.54	Low strength	0.00	Depth to bedrock	0.54
		Droughty	0.85	Shrink-swell	0.45		
		Low content of organic matter	0.88				
		Water erosion	0.99				
307:							
Pinehill, loam	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.69		
		Water erosion	0.99				
Pinehill, clay loam	40	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.56		
		Water erosion	0.99				
308:							
Pinehill	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.69		
		Water erosion	0.99				
Pylon	35	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Depth to bedrock	0.84	Low strength	0.00	Depth to bedrock	0.84
		Low content of organic matter	0.88	Shrink-swell	0.54		
		Water erosion	0.99				
		Droughty	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
309:							
Pitchdraw-----------	40	Fair		Poor		Fair	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Depth to bedrock	0.65
		Droughty	0.45			Slope	0.84
		Depth to bedrock	0.65				
Ashollow------------	25	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.96
Mittenbutte---------	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Slope	0.37
		Low content of organic matter	0.12				
310:							
Rockypoint----------	80	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Salinity	0.50
		Water erosion	0.99				
311:							
Rockypoint----------	50	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Salinity	0.50
		Water erosion	0.99				
Boruff--------------	40	Poor		Poor		Poor	
		Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Low content of organic matter	0.12 0.12	Low strength	0.00	Too clayey	0.00
		Sodium content	0.22	Shrink-swell	0.12	Sodium content	0.22
		Water erosion	0.99			Salinity	0.50
312:							
Rockypoint----------	50	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Salinity	0.50
		Water erosion	0.99				
Sodawells-----------	40	Fair		Good		Good	
		Low content of organic matter	0.12				
313:							
Savageton-----------	45	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Depth to bedrock	0.46	Low strength	0.00	Depth to bedrock	0.46
		Droughty	0.65	Shrink-swell	0.12	Sodium content	0.98
		Low content of organic matter	0.88				
		Sodium content	0.97				
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
313:(cont.)							
Samday--------------	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.00	Too clayey	0.00
		Too clayey	0.00	Shrink-swell	0.12		
		Low content of organic matter	0.12				
		Water erosion	0.99				
314:							
Savageton-----------	45	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Depth to bedrock	0.65	Low strength	0.00	Slope	0.63
		Droughty	0.65	Shrink-swell	0.27	Depth to bedrock	0.65
		Low content of organic matter	0.88				
		Water erosion	0.99				
Silhouette----------	35	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.12		
		Water erosion	0.99				
315:							
Shingle-------------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Low strength	0.22		
		Water erosion	0.99				
Taluce--------------	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12				
Badland-------------	15	Not rated		Not rated		Not rated	
316:							
Shingle, wooded-----	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Low strength	0.22		
		Too acid	0.84				
Taluce, wooded------	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12				
		Too acid	0.84				
Badland-------------	15	Not rated		Not rated		Not rated	

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
317:							
Silhouette	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.12		
		Water erosion	0.99				
Ulm	35	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.67		
		Water erosion	0.99				
318:							
Sodawells	45	Fair		Good		Good	
		Low content of organic matter	0.12				
Pathfinder	30	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12				
		Droughty	0.98				
Boruff	15	Poor		Poor		Poor	
		Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.00
		Sodium content	0.22	Shrink-swell	0.12	Sodium content	0.22
		Water erosion	0.99			Salinity	0.50
319:							
Spottedhorse	45	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Low content of organic matter	0.50	Low strength	0.00	Depth to bedrock	0.90
		Depth to bedrock	0.90	Shrink-swell	0.12		
		Droughty	0.99				
		Water erosion	0.99				
Leiter	35	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Depth to bedrock	0.79	Low strength	0.00	Depth to bedrock	0.79
		Low content of organic matter	0.88	Shrink-swell	0.47		
		Droughty	0.99				
		Water erosion	0.99				
320:							
Stetter	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.12	Salinity	0.50
		Too acid	0.95				
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
321:							
Swanboy	35	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Sodium content	0.22	Low strength	0.00	Salinity	0.00
		Salinity	0.50			Sodium content	0.22
		Low content of organic matter	0.88				
		Water erosion	0.99				
Cedar Butte	30	Poor		Poor		Poor	
		Sodium content	0.00	Low strength	0.00	Sodium content	0.00
		Too alkaline	0.00	Shrink-swell	0.12	Salinity	0.00
		Too clayey	0.08			Too clayey	0.05
		Low content of organic matter	0.12				
		Salinity	0.88				
		Water erosion	0.99				
Slickspots	15	Poor		Not rated		Poor	
		Sodium content	0.00			Sodium content	0.00
		Too alkaline	0.00			Salinity	0.00
		Too clayey	0.00			Too clayey	0.00
		Salinity	0.00				
		Low content of organic matter	0.50				
322:							
Toby	40	Fair		Good		Good	
		Low content of organic matter	0.12				
Twilight	30	Fair		Poor		Poor	
		Droughty	0.29	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.46			Depth to bedrock	0.46
		Low content of organic matter	0.88				
Blacksheep	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.50	Slope	0.00
		Low content of organic matter	0.12				
323:							
Ucross	45	Fair		Poor		Fair	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.63
				Low strength	0.00	Depth to bedrock	0.65
		Depth to bedrock	0.65	Shrink-swell	0.87		
		Water erosion	0.99				
Fairburn	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.63
		Low content of organic matter	0.12				
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
324:							
Ucross	45	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
				Low strength	0.00	Depth to bedrock	0.65
		Depth to bedrock	0.65	Slope	0.50		
		Water erosion	0.99	Shrink-swell	0.87		
Fairburn	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Low strength	0.22	Depth to bedrock	0.00
		Low content of organic matter	0.12	Slope	0.50		
		Water erosion	0.99				
325:							
Ucross, wooded	45	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
				Slope	0.00	Depth to bedrock	0.71
		Depth to bedrock	0.71	Low strength	0.00		
		Too acid	0.84	Shrink-swell	0.87		
Fairburn, wooded	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Low strength	0.22		
		Too acid	0.84				
326:							
Ucross, wooded	35	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
				Low strength	0.00	Depth to bedrock	0.68
		Depth to bedrock	0.68	Shrink-swell	0.87		
		Too acid	0.84				
		Water erosion	0.99				
Iwait, wooded	25	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
				Shrink-swell	0.87		
		Too acid	0.84				
Fairburn, wooded	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12				
		Too acid	0.84				
327:							
Ulm	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.67		
		Water erosion	0.99				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
327:(cont.)							
Bidman	40	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.29
		Too clayey	0.50	Shrink-swell	0.12		
		Water erosion	0.99				
328:							
Ulm	80	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.67		
		Water erosion	0.99				
329:							
Ulm	90	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.29
		Too clayey	0.50	Shrink-swell	0.12		
		Water erosion	0.99				
330:							
Ulm	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.67		
		Water erosion	0.99				
331:							
Valent	60	Poor		Good		Poor	
		Wind erosion	0.00			Too sandy	0.00
		Too sandy	0.00				
		Low content of organic matter	0.12				
		Droughty	0.35				
Duneland	35	Poor		Not rated		Poor	
		Wind erosion	0.00			Too sandy	0.00
		Too sandy	0.00			Slope	0.84
		Low content of organic matter	0.12				
		Droughty	0.35				
332:							
Vanstel	50	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.99				
Pinehill	35	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.71		
		Water erosion	0.99				
333:							
Vonalee	40	Fair		Good		Good	
		Low content of organic matter	0.12				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
333:(cont.)							
Terro	25	Fair		Poor		Fair	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Depth to bedrock	0.54
		Droughty	0.35			Slope	0.63
		Depth to bedrock	0.54				
Taluce	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Slope	0.00
		Low content of organic matter	0.12				
334:							
Vonalf	40	Fair		Good		Good	
		Low content of organic matter	0.88				
Xema	25	Fair		Poor		Fair	
		Droughty	0.45	Depth to bedrock	0.00	Slope	0.63
		Depth to bedrock	0.65			Depth to bedrock	0.65
		Low content of organic matter	0.88				
Mittenbutte	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Slope	0.00
		Low content of organic matter	0.12				
335:							
Wibaux	30	Poor		Poor		Poor	
		Too sandy	0.00	Cobble content	0.00	Too sandy	0.00
		Droughty	0.00	Slope	0.00	Hard to reclaim, rock fragments	0.00
		Cobble content	0.00	Stone content	0.92	Rock fragments	0.00
		Low content of organic matter	0.12			Slope	0.00
		Stone content	0.82				
Shingle	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.50		
Taluce	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.50	Slope	0.00
		Low content of organic matter	0.12				

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
336:							
Wibaux, wooded------	30	Poor		Poor		Poor	
		Too sandy	0.00	Cobble content	0.00	Too sandy	0.00
		Droughty	0.00	Slope	0.50	Hard to reclaim, rock fragments	0.00
		Cobble content	0.00	Stone content	0.94	Rock fragments	0.00
		Low content of organic matter	0.12			Slope	0.00
		Stone content	0.84				
		Too acid	0.84				
Shingle, wooded-----	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Low strength	0.22	Slope	0.00
		Low content of organic matter	0.12	Slope	0.50		
		Too acid	0.84				
Taluce, wooded------	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.50	Slope	0.00
		Low content of organic matter	0.12				
		Too acid	0.84				
337:							
Winler--------------	50	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Low content of organic matter	0.50	Shrink-swell	0.00	Depth to bedrock	0.71
		Droughty	0.52	Low strength	0.00	Sodium content	0.90
		Depth to bedrock	0.71				
		Sodium content	0.90				
Twotop--------------	35	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Low strength	0.00	Sodium content	0.90
		Sodium content	0.90				
338:							
Zigweid-------------	50	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.99	Shrink-swell	0.87		
Cambria-------------	30	Fair		Fair		Good	
		Low content of organic matter	0.12	Shrink-swell	0.87		
		Water erosion	0.90				
339:							
Zigweid-------------	30	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.74
		Water erosion	0.99	Shrink-swell	0.87		

Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
339:(cont.)							
Kishona-------------	30	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.74
				Shrink-swell	0.87		
		Water erosion	0.99				
Cambria-------------	25	Fair		Fair		Fair	
		Low content of organic matter	0.12	Shrink-swell	0.87	Slope	0.74
		Water erosion	0.90				

Ponds and Embankments

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
103:							
Arwite	85	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
105:							
Arwite	50	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Elwop	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.70	No groundwater	1.00
		Depth to bedrock	0.04				
106:							
Arwite	45	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Elwop	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.70	No groundwater	1.00
		Depth to bedrock	0.04				
		Slope	0.01				
107:							
Arwite	45	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Vonalf	35	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
122:							
Cushman	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.86	No groundwater	1.00
		Depth to bedrock	0.11	Piping	0.07		
		Slope	0.01				
Cambria	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.39	No groundwater	1.00
131:							
Deekay	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.25	No groundwater	1.00
132:							
Deekay	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.25	No groundwater	1.00
Moorhead	35	Somewhat limited		Not limited		Very limited	
		Seepage	0.72			No groundwater	1.00
133:							
Deekay	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.25	No groundwater	1.00

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
133:(cont.)							
Moorhead	40	Somewhat limited		Not limited		Very limited	
		Seepage	0.72			No groundwater	1.00
134:							
Deekay	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.25	No groundwater	1.00
Oldwolf	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.81	No groundwater	1.00
		Depth to bedrock	0.08	Piping	0.13		
135:							
Deekay	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.25	No groundwater	1.00
Oldwolf	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.81	No groundwater	1.00
		Depth to bedrock	0.08	Piping	0.13		
		Slope	0.01				
136:							
Deekay	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.25	No groundwater	1.00
Ziggy	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.04	No groundwater	1.00
137:							
Echeta	85	Not limited		Somewhat limited		Very limited	
				Hard to pack	0.90	No groundwater	1.00
138:							
Echeta	45	Not limited		Somewhat limited		Very limited	
				Hard to pack	0.90	No groundwater	1.00
Cromack	35	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.13	Thin layer	0.88	No groundwater	1.00
		Slope	0.01	Hard to pack	0.68		
144:							
Forkwood	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.23	No groundwater	1.00
146:							
Forkwood	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.23	No groundwater	1.00
Cushman	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.86	No groundwater	1.00
		Depth to bedrock	0.11	Piping	0.07		
147:							
Forkwood	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.23	No groundwater	1.00

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
147:(cont.)							
Cushman-------------	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.86	No groundwater	1.00
		Depth to bedrock	0.11	Piping	0.07		
		Slope	0.01				
148:							
Forkwood------------	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.23	No groundwater	1.00
Ulm-----------------	35	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
149:							
Forkwood------------	55	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.23	No groundwater	1.00
Ulm-----------------	30	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
151:							
Haverdad------------	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.56	No groundwater	1.00
155:							
Heldt, saline-------	45	Not limited		Very limited		Very limited	
				Hard to pack	1.00	No groundwater	1.00
				Salinity	0.50		
Bidman, saline------	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Salinity	0.50	No groundwater	1.00
				Piping	0.40		
162:							
Lismas--------------	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
		Slope	0.12	Hard to pack	0.96		
Mittenbutte, cool---	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.53	Thin layer	1.00	No groundwater	1.00
		Slope	0.21				
		Seepage	0.04				
Sabatka-------------	20	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.11	Thin layer	0.86	No groundwater	1.00
		Slope	0.08	Hard to pack	0.82		
164:							
Lismas--------------	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
		Slope	0.12	Hard to pack	0.96		
Sabatka-------------	30	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.11	Thin layer	0.86	No groundwater	1.00
		Slope	0.06	Hard to pack	0.82		

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
164:(cont.)							
Badland	10	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.28				
166:							
Jaywest	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Hard to pack	0.20	No groundwater	1.00
167:							
Jaywest	40	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Hard to pack	0.20	No groundwater	1.00
Moorhead	40	Somewhat limited		Not limited		Very limited	
		Seepage	0.72			No groundwater	1.00
168:							
Jaywest	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Hard to pack	0.20	No groundwater	1.00
Spottedhorse	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Thin layer	0.70	No groundwater	1.00
		Depth to bedrock	0.04	Hard to pack	0.52		
170:							
Keeline	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.02	No groundwater	1.00
Tullock	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.91	No groundwater	1.00
		Depth to bedrock	0.17	Seepage	0.08		
		Slope	0.03				
174:							
Brislawn	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
Rockybutte	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
Ironbutte	20	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
				Content of large stones	1.00		
176:							
Leiter	50	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.06	Thin layer	0.77	No groundwater	1.00
		Seepage	0.04	Hard to pack	0.37		
Cromack	30	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.13	Thin layer	0.88	No groundwater	1.00
				Hard to pack	0.68		
181:							
Moorhead	80	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
182:							
Moorhead	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.72			No groundwater	1.00
183:							
Moorhead	50	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
Leiter	30	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.06	Thin layer	0.77	No groundwater	1.00
		Seepage	0.04	Hard to pack	0.37		
184:							
Moorhead	45	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
Leiter	35	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.06	Thin layer	0.77	No groundwater	1.00
		Seepage	0.04	Hard to pack	0.37		
		Slope	0.01				
185:							
Moskee	85	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
187:							
Nuncho	80	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
191:							
Pits	60	Not rated		Not rated		Not rated	
Dumps	40	Not rated		Not rated		Not rated	
192:							
Platmak	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Hard to pack	0.31	No groundwater	1.00
198:							
Recluse	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.31	No groundwater	1.00
203:							
Rockypoint	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.53	No groundwater	1.00
Iwait	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.02	No groundwater	1.00
204:							
Samday	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
		Slope	0.21	Hard to pack	0.81		
Samday, cool	25	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.84	Thin layer	1.00	No groundwater	1.00
		Slope	0.21				

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
204:(cont.)							
Shingle-------------	20	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
		Slope	0.21				
206:							
Samday--------------	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
		Slope	0.28	Hard to pack	0.81		
Shingle-------------	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.78	Thin layer	1.00	No groundwater	1.00
		Slope	0.28	Piping	0.59		
Badland-------------	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.72				
207:							
Cromack-------------	30	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.13	Thin layer	0.88	No groundwater	1.00
				Hard to pack	0.68		
Fairburn------------	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	No groundwater	1.00
		Slope	0.01	Piping	0.65		
Ucross--------------	25	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.83	No groundwater	1.00
		Depth to bedrock	0.09	Piping	0.03		
		Slope	0.01				
210:							
Shingle-------------	40	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.78	Thin layer	1.00	No groundwater	1.00
		Slope	0.06	Piping	0.59		
Taluce--------------	40	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.53	Thin layer	1.00	No groundwater	1.00
		Slope	0.06				
		Seepage	0.04				
215:							
Theedle-------------	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.66	No groundwater	1.00
		Depth to bedrock	0.03	Piping	0.47		
		Slope	0.01				
Kishona-------------	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.01	No groundwater	1.00
216:							
Theedle-------------	40	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.91	No groundwater	1.00
		Depth to bedrock	0.17	Piping	0.01		
		Slope	0.06				

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
216:(cont.)							
Kishona	20	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.01	No groundwater	1.00
Shingle	20	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.78	Thin layer	1.00	No groundwater	1.00
		Slope	0.08	Piping	0.59		
217:							
Theedle	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.91	No groundwater	1.00
		Depth to bedrock	0.17	Piping	0.01		
		Slope	0.06				
Shingle	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.78	Thin layer	1.00	No groundwater	1.00
		Slope	0.06	Piping	0.59		
219:							
Torriarents	50	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
Torriorthents	50	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
220:							
Pitchdraw	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.83	No groundwater	1.00
		Depth to bedrock	0.09				
		Slope	0.03				
Ashollow	25	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Niobrara	20	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.78	Thin layer	1.00	No groundwater	1.00
		Slope	0.12	Seepage	0.09		
		Seepage	0.04				
221:							
Turnercrest	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.81	No groundwater	1.00
		Depth to bedrock	0.08				
		Slope	0.03				
Keeline	30	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Taluce	15	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.69	Thin layer	1.00	No groundwater	1.00
		Slope	0.12				
		Seepage	0.04				
223:							
Ucross	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.83	No groundwater	1.00
		Depth to bedrock	0.09	Piping	0.03		

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
224:							
Ucross	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.83	No groundwater	1.00
		Depth to bedrock	0.09	Piping	0.03		
Iwait	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.01	No groundwater	1.00
225:							
Ucross	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.83	No groundwater	1.00
		Depth to bedrock	0.09	Piping	0.03		
		Slope	0.03				
Iwait	25	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.01	No groundwater	1.00
Fairburn	20	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	No groundwater	1.00
		Slope	0.08	Piping	0.65		
228:							
Ulm	45	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
Renohill	40	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Thin layer	0.70	No groundwater	1.00
		Depth to bedrock	0.04	Hard to pack	0.66		
229:							
Ulm	45	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
Renohill	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Thin layer	0.70	No groundwater	1.00
		Depth to bedrock	0.04	Hard to pack	0.37		
		Slope	0.01				
233:							
Ustic Torriorthents, gullied	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	No groundwater	1.00
		Slope	0.24	Thin layer	0.70		
		Depth to bedrock	0.04				
234:							
Ustic Torriorthents	65	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	No groundwater	1.00
		Slope	0.28	Thin layer	0.70		
		Depth to bedrock	0.04				
Badland	20	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				
236:							
Vonalee	50	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
236:(cont.)							
Terro	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	No groundwater	1.00
		Depth to bedrock	0.11				
238:							
Vonalf	50	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Xema	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.83	No groundwater	1.00
		Depth to bedrock	0.09				
239:							
Ironbutte	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
		Slope	0.21	Content of large stones	1.00		
Fairburn	25	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	No groundwater	1.00
		Slope	0.21	Piping	0.65		
Mittenbutte	25	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
		Slope	0.21				
		Seepage	0.04				
241:							
Ironbutte	55	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
		Slope	0.21	Content of large stones	1.00		
Ironbutte, thin solum	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
		Slope	0.21	Content of large stones	1.00		
244:							
Muleherder	45	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
		Slope	0.06				
Ironbutte	40	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
		Slope	0.21	Content of large stones	1.00		
248:							
Ziggy	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.04	No groundwater	1.00
Iwait	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.01	No groundwater	1.00

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
249:							
Ziggy	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.04	No groundwater	1.00
Iwait	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.01	No groundwater	1.00
250:							
Ziggy	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.07	No groundwater	1.00
Ucross	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.83	No groundwater	1.00
		Depth to bedrock	0.09	Piping	0.03		
		Slope	0.01				
Oldwolf	20	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.81	No groundwater	1.00
		Depth to bedrock	0.08	Piping	0.13		
		Slope	0.01				
251:							
Water	100	Not rated		Not rated		Not rated	
252:							
Absted	45	Not limited		Very limited		Very limited	
				Piping	1.00	No groundwater	1.00
				Salinity	0.12		
Slickspots	35	Not limited		Very limited		Very limited	
				Salinity	1.00	No groundwater	1.00
				Hard to pack	1.00		
253:							
Absted	30	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Piping	1.00	No groundwater	1.00
				Salinity	0.50		
Arvada	30	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Piping	1.00	No groundwater	1.00
				Salinity	0.50		
Slickspots	20	Not limited		Very limited		Very limited	
				Salinity	1.00	No groundwater	1.00
				Hard to pack	1.00		
254:							
Badland	50	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				
Lismas	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
		Slope	0.28	Hard to pack	0.96		
255:							
Bidman	45	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
255:(cont.)							
Parmleed	35	Somewhat limited Seepage Depth to bedrock	 0.04 0.02	Somewhat limited Thin layer Hard to pack	 0.61 0.46	Very limited No groundwater	 1.00
256:							
Bidman	55	Somewhat limited Seepage	 0.72	Somewhat limited Piping	 0.01	Very limited No groundwater	 1.00
Ulm	35	Somewhat limited Seepage	 0.04	Not limited		Very limited No groundwater	 1.00
257:							
Bonfri, deep	50	Very limited Seepage Depth to bedrock	 1.00 0.01	Somewhat limited Thin layer	 0.01	Very limited No groundwater	 1.00
Bonfri	30	Very limited Seepage Depth to bedrock	 1.00 0.13	Somewhat limited Thin layer	 0.88	Very limited No groundwater	 1.00
258:							
Bonfri	50	Somewhat limited Seepage Depth to bedrock	 0.72 0.08	Somewhat limited Thin layer Piping	 0.81 0.57	Very limited No groundwater	 1.00
Kirby	35	Very limited Seepage	 1.00	Very limited Seepage Content of large stones	 1.00 0.92	Very limited No groundwater	 1.00
259:							
Bonfri	40	Very limited Seepage Depth to bedrock	 1.00 0.11	Somewhat limited Thin layer	 0.86	Very limited No groundwater	 1.00
Twilight	30	Very limited Seepage Depth to bedrock Slope	 1.00 0.13 0.03	Somewhat limited Thin layer	 0.88	Very limited No groundwater	 1.00
Blacksheep	15	Somewhat limited Depth to bedrock Slope Seepage	 0.61 0.12 0.04	Very limited Thin layer	 1.00	Very limited No groundwater	 1.00
260:							
Cabbart, wooded	40	Somewhat limited Depth to bedrock Slope	 0.61 0.28	Very limited Thin layer Piping	 1.00 0.77	Very limited No groundwater	 1.00
Volborg, wooded	30	Somewhat limited Depth to bedrock Slope	 0.61 0.28	Very limited Thin layer Hard to pack	 1.00 0.61	Very limited No groundwater	 1.00
Badland	15	Very limited Depth to bedrock Slope	 1.00 0.72	Not rated		Not rated	

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
261:							
Cabbart	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	No groundwater	1.00
		Slope	0.12	Piping	0.62		
Yawdim	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
		Slope	0.12	Hard to pack	0.76		
Badland	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.50				
262:							
Cambria	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.42	No groundwater	1.00
Kishona	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.01	No groundwater	1.00
Zigweid	25	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.01	No groundwater	1.00
263:							
Cedar Butte	65	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Piping	1.00	No groundwater	1.00
				Salinity	0.50		
Slickspots	20	Not limited		Very limited		Very limited	
				Salinity	1.00	No groundwater	1.00
				Hard to pack	1.00		
264:							
Clarkelen	50	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Draknab	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.08	No groundwater	1.00
265:							
Clarkelen	45	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Draknab	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.08	No groundwater	1.00
Boruff	15	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
						Cutbanks cave	0.10
				Hard to pack	1.00	Salty water	0.06
266:							
Coaliams, moderately saline	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Salinity	0.50	Salty water	0.78
				Depth to saturated zone	0.46	Slow refill	0.28
						Depth to water	0.24
				Piping	0.30	Cutbanks cave	0.10

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
267:							
Cromack-------------	45	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.13	Thin layer	0.88	No groundwater	1.00
				Hard to pack	0.68		
Samsil--------------	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	No groundwater	1.00
				Hard to pack	0.71		
268:							
Decolney------------	45	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Hiland--------------	40	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
269:							
Decolney------------	40	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Hiland--------------	40	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
270:							
Deekay--------------	40	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.25	No groundwater	1.00
Deekay, stratified substratum---------	40	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.26	No groundwater	1.00
271:							
Delpoint------------	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.77	No groundwater	1.00
		Depth to bedrock	0.06	Piping	0.02		
		Slope	0.03				
Cabbart-------------	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	No groundwater	1.00
		Slope	0.12	Piping	0.62		
272:							
Delpoint------------	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.77	No groundwater	1.00
		Depth to bedrock	0.06	Piping	0.02		
		Slope	0.03				
Yamacall------------	25	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.53	No groundwater	1.00
Cabbart-------------	20	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	No groundwater	1.00
		Slope	0.12	Piping	0.62		
273:							
Delpoint, wooded----	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.74	No groundwater	1.00
		Depth to bedrock	0.05	Piping	0.05		
		Slope	0.03				

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
273:(cont.)							
Yamacall, wooded	25	Somewhat limited Seepage	 0.72	Somewhat limited Piping	 0.58	Very limited No groundwater	 1.00
Cabbart, wooded	20	Somewhat limited Depth to bedrock Slope	 0.61 0.12	Very limited Thin layer Piping	 1.00 0.77	Very limited No groundwater	 1.00
274:							
Denied access	100	Not rated		Not rated		Not rated	
275:							
Echeta	45	Not limited		Somewhat limited Hard to pack	 0.90	Very limited No groundwater	 1.00
Moorhead	40	Somewhat limited Seepage	 0.04	Not limited		Very limited No groundwater	 1.00
276:							
Elwop, wooded	35	Very limited Seepage Depth to bedrock	 1.00 0.04	Somewhat limited Thin layer	 0.70	Very limited No groundwater	 1.00
Mittenbutte, wooded	35	Somewhat limited Depth to bedrock Slope Seepage	 0.61 0.28 0.04	Very limited Thin layer	 1.00	Very limited No groundwater	 1.00
Rock outcrop	15	Very limited Depth to bedrock Slope	 1.00 0.88	Not rated		Not rated	
277:							
Fairburn	40	Somewhat limited Depth to bedrock Slope	 0.66 0.28	Very limited Thin layer Piping	 1.00 0.65	Very limited No groundwater	 1.00
Mittenbutte	25	Somewhat limited Depth to bedrock Slope Seepage	 0.61 0.28 0.04	Very limited Thin layer	 1.00	Very limited No groundwater	 1.00
Badland	15	Very limited Depth to bedrock Slope	 1.00 0.72	Not rated		Not rated	
278:							
Fairburn	35	Somewhat limited Depth to bedrock Slope	 0.66 0.12	Very limited Thin layer Piping	 1.00 0.65	Very limited No groundwater	 1.00
Samsil	30	Somewhat limited Depth to bedrock Slope	 0.66 0.12	Very limited Thin layer Hard to pack	 1.00 0.71	Very limited No groundwater	 1.00
Badland	15	Very limited Depth to bedrock Slope	 1.00 0.50	Not rated		Not rated	

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
279:							
Fairburn, wooded----	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.63	Thin layer	1.00	No groundwater	1.00
		Slope	0.08	Piping	0.80		
Samsil, wooded------	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	No groundwater	1.00
		Slope	0.08	Hard to pack	0.46		
Badland-------------	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.72				
280:							
Felix---------------	85	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
						Cutbanks cave	1.10
				Hard to pack	1.00	Salty water	0.06
				Ponding	1.00		
281:							
Foreleft------------	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.23	No groundwater	1.00
282:							
Foreleft------------	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.23	No groundwater	1.00
Bonfri--------------	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.81	No groundwater	1.00
		Depth to bedrock	0.08	Piping	0.57		
283:							
Gateson, wooded-----	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.61	No groundwater	1.00
		Slope	0.03				
		Depth to bedrock	0.02				
Xema, wooded--------	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.56	No groundwater	1.00
		Slope	0.03				
		Depth to bedrock	0.02				
Mittenbutte, wooded-	20	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.74	Thin layer	1.00	No groundwater	1.00
		Slope	0.12				
		Seepage	0.04				
284:							
Haverdad------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	0.46	Slow refill	0.28
						Depth to water	0.24
						Cutbanks cave	0.10
285:							
Haverdad------------	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.54	No groundwater	1.00

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
285:(cont.)							
Boruff	40	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
						Cutbanks cave	0.10
				Hard to pack	1.00	Salty water	0.06
286:							
Havre	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.56	No groundwater	1.00
Bigsandy	35	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.53	Salty water	0.06
287:							
Hiland	45	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Bowbac	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.98	No groundwater	1.00
		Depth to bedrock	0.30				
288:							
Hiland	50	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Bowbac	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.52	No groundwater	1.00
		Depth to bedrock	0.01	Piping	0.27		
289:							
Hiland	45	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Bowbac	35	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
		Depth to bedrock	0.01				
		Slope	0.01				
290:							
Hiland	50	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Decolney	35	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
291:							
Ironbutte, wooded	35	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
		Slope	0.50	Content of large stones	1.00		
Fairburn, wooded	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
		Slope	0.12	Piping	0.80		

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
291:(cont.)							
Mittenbutte, wooded-	15	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.58	Thin layer	1.00	No groundwater	1.00
		Slope	0.12				
		Seepage	0.04				
292:							
Jaywest-------------	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Hard to pack	0.20	No groundwater	1.00
Jaywest, stratified substratum---------	40	Somewhat limited		Not limited		Very limited	
		Seepage	0.72			No groundwater	1.00
293:							
Jaywest, saline substratum---------	40	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Piping	1.00	No groundwater	1.00
				Salinity	0.50		
Cedar Butte---------	30	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Hard to pack	1.00	No groundwater	1.00
				Salinity	0.50		
Slickspots----------	15	Not limited		Very limited		Very limited	
				Salinity	1.00	No groundwater	1.00
				Hard to pack	1.00		
294:							
Kirby, wooded-------	40	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
		Slope	0.50	Content of large stones	0.83		
Cabbart, wooded-----	25	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
		Slope	0.12	Piping	0.77		
Blacksheep, wooded--	15	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
		Slope	0.12				
		Seepage	0.04				
295:							
Lismas--------------	40	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
				Hard to pack	0.96		
Sabatka-------------	30	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.11	Thin layer	0.86	No groundwater	1.00
				Hard to pack	0.82		
Xema----------------	15	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.77	No groundwater	1.00
		Depth to bedrock	0.06				

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296:							
Megonot	50	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.06	Hard to pack	0.77	No groundwater	1.00
				Thin layer	0.77		
Yawdim	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
				Hard to pack	0.76		
297:							
Muleherder, wooded	45	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
		Slope	0.12				
Ironbutte, wooded	40	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
		Slope	0.28	Content of large stones	1.00		
298:							
Nuncho	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
299:							
Oldwolf	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.81	No groundwater	1.00
		Depth to bedrock	0.08	Piping	0.13		
Fairburn	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	No groundwater	1.00
				Piping	0.65		
300:							
Oshoto	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.95	No groundwater	1.00
Klinedraw	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.95	No groundwater	1.00
		Depth to bedrock	0.08	Thin layer	0.81		
301:							
Oshoto	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.95	No groundwater	1.00
Klinedraw	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.95	No groundwater	1.00
		Depth to bedrock	0.08	Thin layer	0.81		
302:							
Oshoto	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.95	No groundwater	1.00
Moorhead	30	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
303:							
Oshoto	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.95	No groundwater	1.00

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
303:(cont.)							
Ziggy	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.94	No groundwater	1.00
304:							
Parmleed	40	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.11	Thin layer	0.86	No groundwater	1.00
		Seepage	0.04				
Bidman	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.01	No groundwater	1.00
305:							
Pinehill	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
306:							
Pinehill	50	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
Pylon	35	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.11	Thin layer	0.86	No groundwater	1.00
		Seepage	0.04	Hard to pack	0.67		
307:							
Pinehill, loam	45	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
Pinehill, clay loam	40	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
308:							
Pinehill	45	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
Pylon	35	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.05	Thin layer	0.74	No groundwater	1.00
		Seepage	0.04	Hard to pack	0.33		
309:							
Pitchdraw	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.83	No groundwater	1.00
		Depth to bedrock	0.09				
Ashollow	25	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Mittenbutte	15	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
		Seepage	0.04				
		Slope	0.01				
310:							
Rockypoint	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.53	No groundwater	1.00
311:							
Rockypoint	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.53	No groundwater	1.00

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
311:(cont.)							
Boruff	40	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
						Cutbanks cave	0.10
				Hard to pack	1.00	Salty water	0.06
312:							
Rockypoint	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.53	No groundwater	1.00
Sodawells	40	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
313:							
Savageton	45	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.13	Thin layer	0.88	No groundwater	1.00
				Hard to pack	0.78		
Samday	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
				Hard to pack	0.81		
314:							
Savageton	45	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.09	Thin layer	0.83	No groundwater	1.00
		Slope	0.01	Hard to pack	0.58		
Silhouette	35	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
315:							
Shingle	40	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.78	Thin layer	1.00	No groundwater	1.00
		Slope	0.28	Piping	0.59		
Taluce	25	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.53	Thin layer	1.00	No groundwater	1.00
		Slope	0.28				
		Seepage	0.04				
Badland	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.72				
316:							
Shingle, wooded	40	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.74	Thin layer	1.00	No groundwater	1.00
		Slope	0.28	Piping	0.80		
Taluce, wooded	25	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.50	Thin layer	1.00	No groundwater	1.00
		Slope	0.28				
		Seepage	0.04				
Badland	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.88				

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
317:							
Silhouette	45	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
Ulm	35	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
318:							
Sodawells	45	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Pathfinder	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.08	No groundwater	1.00
Boruff	15	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
						Cutbanks cave	1.10
				Hard to pack	1.00	Salty water	0.06
319:							
Spottedhorse	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Thin layer	0.70	No groundwater	1.00
		Depth to bedrock	0.04	Hard to pack	0.52		
Leiter	35	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.06	Thin layer	0.77	No groundwater	1.00
		Seepage	0.04	Hard to pack	0.37		
320:							
Stetter	85	Not limited		Very limited		Very limited	
				Hard to pack	1.00	No groundwater	1.00
321:							
Swanboy	35	Not limited		Very limited		Very limited	
				Hard to pack	1.00	No groundwater	1.00
				Salinity	0.50		
Cedar Butte	30	Not limited		Very limited		Very limited	
				Hard to pack	1.00	No groundwater	1.00
				Salinity	0.12		
Slickspots	15	Not limited		Very limited		Very limited	
				Salinity	1.00	No groundwater	1.00
				Hard to pack	1.00		
322:							
Toby	40	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Twilight	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.88	No groundwater	1.00
		Depth to bedrock	0.13				
		Slope	0.03				
Blacksheep	15	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	No groundwater	1.00
		Slope	0.12				
		Seepage	0.04				

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
323:							
Ucross	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.83	No groundwater	1.00
		Depth to bedrock	0.09	Piping	0.03		
		Slope	0.01				
Fairburn	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	No groundwater	1.00
		Slope	0.01	Piping	0.65		
324:							
Ucross	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.83	No groundwater	1.00
		Slope	0.12	Piping	0.03		
		Depth to bedrock	0.09				
Fairburn	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	No groundwater	1.00
		Slope	0.12	Piping	0.65		
325:							
Ucross, wooded	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.81	No groundwater	1.00
		Slope	0.50	Piping	0.07		
		Depth to bedrock	0.08				
Fairburn, wooded	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	No groundwater	1.00
		Slope	0.50	Piping	0.81		
326:							
Ucross, wooded	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Thin layer	0.82	No groundwater	1.00
		Depth to bedrock	0.08	Piping	0.08		
		Slope	0.03				
Iwait, wooded	25	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.03	No groundwater	1.00
Fairburn, wooded	20	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.63	Thin layer	1.00	No groundwater	1.00
		Slope	0.03	Piping	0.80		
327:							
Ulm	45	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
Bidman	40	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
328:							
Ulm	80	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
329:							
Ulm	90	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
330:							
Ulm	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
331:							
Valent	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.10	No groundwater	1.00
Duneland	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.10	No groundwater	1.00
332:							
Vanstel	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.94	No groundwater	1.00
Pinehill	35	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			No groundwater	1.00
333:							
Vonalee	40	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Terro	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	No groundwater	1.00
		Depth to bedrock	0.11				
		Slope	0.01				
Taluce	15	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.53	Thin layer	1.00	No groundwater	1.00
		Seepage	0.04				
		Slope	0.03				
334:							
Vonalf	40	Very limited		Not limited		Very limited	
		Seepage	1.00			No groundwater	1.00
Xema	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.83	No groundwater	1.00
		Depth to bedrock	0.09				
		Slope	0.01				
Mittenbutte	15	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.61	Thin layer	1.00	No groundwater	1.00
		Seepage	0.04				
		Slope	0.03				
335:							
Wibaux	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
		Slope	0.28	Content of large stones	0.99		
Shingle	25	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.78	Thin layer	1.00	No groundwater	1.00
		Slope	0.12	Piping	0.59		

Ponds and Embankments--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
335:(cont.)							
Taluce--------------	20	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.53	Thin layer	1.00	No groundwater	1.00
		Slope	0.12				
		Seepage	0.04				
336:							
Wibaux, wooded------	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	No groundwater	1.00
		Slope	0.12	Content of large stones	0.99		
Shingle, wooded-----	25	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.74	Thin layer	1.00	No groundwater	1.00
		Slope	0.12	Piping	0.80		
Taluce, wooded------	20	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.50	Thin layer	1.00	No groundwater	1.00
		Slope	0.12				
		Seepage	0.04				
337:							
Winler--------------	50	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.08	Hard to pack	1.00	No groundwater	1.00
				Thin layer	0.81		
Twotop--------------	35	Not limited		Very limited		Very limited	
				Hard to pack	1.00	No groundwater	1.00
338:							
Zigweid-------------	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.54	No groundwater	1.00
Cambria-------------	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.98	No groundwater	1.00
339:							
Zigweid-------------	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.55	No groundwater	1.00
		Slope	0.01				
Kishona-------------	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.55	No groundwater	1.00
		Slope	0.01				
Cambria-------------	25	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	0.99	No groundwater	1.00
		Slope	0.01				

Engineering Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
103:												
Arwite----------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-32	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	32-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
105:												
Arwite----------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-32	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	32-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Elwop-----------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-24	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	24-35	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	35-60	Bedrock			---	---	---	---	---	---	---	---
106:												
Arwite----------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-32	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	32-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Elwop-----------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-24	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	24-35	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	35-60	Bedrock			---	---	---	---	---	---	---	---
107:												
Arwite----------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-32	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	32-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
107:(cont.)												
Vonalf----------	0-6	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	6-34	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	34-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
122:												
Cushman---------	0-2	Loam	CL	A-6, A-4	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-30	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	30-60	Bedrock			---	---	---	---	---	---	---	---
Cambria---------	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-10	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	15-25
	10-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-35	10-20
131:												
Deekay----------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-24	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	24-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	30-45	10-25
132:												
Deekay----------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-24	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	24-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	30-45	10-25
Moorhead--------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-35	Clay loam, clay	CH, CL	A-7	0	0	100	100	90-100	80-95	45-60	25-40
	35-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-35
133:												
Deekay----------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-24	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	24-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	30-45	10-25
Moorhead--------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-35	Clay loam, clay	CH, CL	A-7	0	0	100	100	90-100	80-95	45-60	25-40
	35-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-35

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
134:												
Deekay----------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-24	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	24-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	30-45	10-25
Oldwolf---------	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-21	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	21-32	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
	32-60	Bedrock			---	---	---	---	---	---	---	---
135:												
Deekay----------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-24	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	24-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	30-45	10-25
Oldwolf---------	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-21	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	21-32	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
	32-60	Bedrock			---	---	---	---	---	---	---	---
136:												
Deekay----------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-24	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	24-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	30-45	10-25
Ziggy-----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-14	Loam, clay loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	14-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
137:												
Echeta----------	0-3	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-15	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	15-60	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	35-65	20-40
138:												
Echeta----------	0-3	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-15	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	15-60	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	35-65	20-40
Cromack---------	0-6	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	6-14	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	14-29	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	35-65	20-40
	29-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
144:												
Forkwood--------	0-2	Loam	CL	A-6, A-4	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
146:												
Forkwood--------	0-2	Loam	CL, CL-ML	A-6, A-4	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
Cushman---------	0-2	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-30	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	30-60	Bedrock			---	---	---	---	---	---	---	---
147:												
Forkwood--------	0-2	Loam	CL	A-6, A-4	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
Cushman---------	0-2	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-30	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	30-60	Bedrock			---	---	---	---	---	---	---	---
148:												
Forkwood--------	0-2	Loam	CL	A-6, A-4	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
Ulm-------------	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-22	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	22-60	Clay loam, loam	CL	A-6	0	0	100	95-100	85-100	75-90	35-55	20-40
149:												
Forkwood--------	0-2	Loam	CL	A-6, A-4	0	0	100	100	85-100	60-75	25-35	5-15
	2-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
Ulm-------------	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-22	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	22-60	Clay loam, loam	CL	A-6	0	0	100	95-100	85-100	75-90	35-55	15-35

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
151:												
Haverdad--------	0-4	Loam	CL	A-6, A-4	0	0	100	100	85-100	60-75	25-35	5-15
	4-60	Stratified fine sandy loam to loam	CL	A-6	0	0	100	95-100	90-100	60-80	25-40	10-25
155:												
Heldt, saline---	0-2	Clay loam	CL	A-7, A-6	0	0	100	100	90-100	75-90	35-55	20-35
	2-22	Clay	CH, CL	A-7	0	0	100	100	90-100	85-95	45-65	25-40
	22-60	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	80-95	45-65	25-40
Bidman, saline--	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-13	Clay	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	13-60	Clay loam, clay	CL	A-7, A-6	0	0	100	95-100	85-100	75-90	35-60	20-35
162:												
Lismas----------	0-3	Clay loam	CL	A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-16	Clay	CH	A-7	0	0	100	90-100	85-100	75-90	55-75	35-50
	16-60	Bedrock			---	---	---	---	---	---	---	---
Mittenbutte, cool-----------	0-4	Fine sandy loam	SC-SM, SC	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-18	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	75-90	35-50	15-25	5-10
	18-60	Bedrock			---	---	---	---	---	---	---	---
Sabatka---------	0-3	Clay loam	CL	A-7, A-6	0	0	100	100	90-100	70-85	35-55	20-35
	3-19	Clay, clay loam	CH	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	19-30	Clay, clay loam	CH	A-7	0	0	100	95-100	85-100	75-90	35-60	20-40
	30-60	Bedrock			---	---	---	---	---	---	---	---
164:												
Lismas----------	0-3	Clay loam	CL	A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-16	Clay	CH	A-7	0	0	100	90-100	85-100	75-90	55-75	35-50
	16-60	Bedrock			---	---	---	---	---	---	---	---
Sabatka---------	0-3	Clay loam	CL	A-7, A-6	0	0	100	100	90-100	70-85	35-55	20-35
	3-19	Clay, clay loam	CH	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	19-30	Clay, clay loam	CH	A-7	0	0	100	95-100	85-100	75-90	35-60	20-40
	30-60	Bedrock			---	---	---	---	---	---	---	---
Badland---------	0-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
166:												
Jaywest---------	0-7	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	7-36	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	36-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	35-55	15-35
167:												
Jaywest---------	0-7	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	7-36	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	36-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	35-55	15-35
Moorhead--------	0-5	Loam	CL	A-6	0	0	100	85-100	60-75	60-75	25-35	10-15
	5-35	Clay loam, clay	CH, CL	A-7	0	0	100	100	90-100	80-95	45-60	25-40
	35-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-35
168:												
Jaywest---------	0-7	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	7-36	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	36-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	35-55	15-35
Spottedhorse----	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-27	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	27-35	Clay loam, clay	CL	A-7, A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
	35-60	Bedrock			---	---	---	---	---	---	---	---
170:												
Keeline---------	0-6	Loamy sand	SM	A-2	0	0	100	100	70-95	20-35	0-10	NP-5
	6-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Tullock---------	0-4	Loamy sand	SM	A-4	0	0	100	100	70-95	35-50	0-0	NP
	4-28	Loamy sand, loamy fine sand, sand	SM	A-2	0	0	100	95-100	40-55	20-35	0-15	NP-5
	28-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
174:												
Brislawn--------	0-6	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	6-21	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	21-31	Channery clay loam, channery clay	CH, GC	A-7, A-6	0	0	70-85	65-80	55-70	45-60	35-60	20-35
	31-37	Very channery clay loam, very channery loam	GC	A-2	0-5	5-15	45-60	35-50	30-45	20-35	30-45	10-25
	37-60	Fragmental material	GW	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
Rockybutte------	0-5	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	5-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	23-38	Extremely channery loam, very channery loam	GC	A-2	0-5	5-15	40-55	20-40	15-30	10-25	30-40	10-20
	38-60	Fragmental material	GW	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
Ironbutte-------	0-4	Channery loam	SC, GC-GM, GC	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	4-12	Very channery loam, extremely channery loam	GC-GM, GC	A-2, A-1	0-5	0-25	30-45	25-40	10-30	5-25	20-35	5-15
	12-60	Fragmental material	GW	A-2, A-1	5-15	60-70	0-10	0-10	0-5	0-5	---	---
176:												
Leiter----------	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-22	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	22-33	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
	33-60	Bedrock			---	---	---	---	---	---	---	---
Cromack---------	0-6	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	6-14	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	14-29	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	35-65	20-40
	29-60	Bedrock			---	---	---	---	---	---	---	---
181:												
Moorhead--------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	24-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-40

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
182:												
Moorhead--------	0-3	Loam	CL	A-6	0	0	100	100	60-75	60-75	30-35	10-15
	3-25	Clay loam, clay	CH, CL	A-7	0	0	100	100	90-100	80-95	45-60	25-40
	25-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-35
183:												
Moorhead--------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	24-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
Leiter----------	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-22	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	22-33	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
	33-60	Bedrock			---	---	---	---	---	---	---	---
184:												
Moorhead--------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	24-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
Leiter----------	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-22	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	22-33	Clay loam, clay	CL, CH	A-7, A-6	0	0	100	95-100	85-100	75-90	35-60	15-40
	33-60	Bedrock			---	---	---	---	---	---	---	---
185:												
Moskee----------	0-9	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	9-32	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	32-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
187:												
Nuncho----------	0-12	Loam	CL	A-6	0	0	100	100	85-100	60-75	30-35	10-15
	12-30	Clay, clay loam	CL, CH	A-7	0	0	100	100	90-100	80-95	40-60	20-40
	30-60	Clay loam	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-35
191:												
Pits------------	---	---	---	---	---	---	---	---	---	---	---	---
Dumps-----------	---	---	---	---	---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
192:												
Platmak---------	0-4	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	4-27	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	27-60	Clay loam	CL	A-7, A-6	0	0	100	95-100	85-100	75-90	35-60	20-35
198:												
Recluse---------	0-5	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	5-23	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	35-45	15-25
	23-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	25-35	10-20
203:												
Rockypoint------	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-60	Stratified fine sandy loam to loam	CL	A-6	0	0	100	95-100	80-95	60-75	25-40	10-20
Iwait-----------	0-6	Loam	CL	A-4, A-6	0	0	100	100	85-100	60-75	25-35	5-15
	6-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	15-25
204:												
Samday----------	0-2	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	2-16	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	45-65	25-40
	16-60	Bedrock			---	---	---	---	---	---	---	---
Samday, cool----	0-1	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	1-10	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	45-65	25-40
	10-60	Bedrock			---	---	---	---	---	---	---	---
Shingle---------	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-16	Clay loam, loam	CL	A-6	0	0	100	90-100	85-100	75-90	30-45	10-25
	16-60	Bedrock			---	---	---	---	---	---	---	---
206:												
Samday----------	0-2	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	2-16	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	45-65	25-40
	16-60	Bedrock			---	---	---	---	---	---	---	---
Shingle---------	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-12	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---
Badland---------	0-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
207:												
Cromack	0-6	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	6-14	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	14-29	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	35-65	20-40
	29-60	Bedrock			---	---	---	---	---	---	---	---
Fairburn	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---
Ucross	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-31	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	31-60	Bedrock			---	---	---	---	---	---	---	---
210:												
Shingle	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-12	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---
Taluce	0-2	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	2-18	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	70-85	35-50	15-25	5-10
	18-60	Bedrock			---	---	---	---	---	---	---	---
215:												
Theedle	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-28	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	28-60	Bedrock			---	---	---	---	---	---	---	---
Kishona	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
216:												
Theedle	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-28	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	28-60	Bedrock			---	---	---	---	---	---	---	---
Kishona	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
Shingle	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-12	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
217:												
Theedle---------	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-28	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	28-60	Bedrock			---	---	---	---	---	---	---	---
Shingle---------	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-12	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---
219:												
Torriarents-----	0-4	Variable	CL	A-6	0	0	95-100	90-100	75-95	65-85	30-55	10-35
	4-60	Variable	CL	A-6	0	0	95-100	90-100	75-95	65-85	30-55	10-35
Torriorthents---	0-5	Variable	CL	A-6	0	0	95-100	90-100	75-95	65-85	30-55	10-35
	5-60	Variable	CL	A-6	0	0	95-100	90-100	75-95	65-85	30-55	10-35
220:												
Pitchdraw-------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	4-31	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	20-25	5-10
	31-60	Bedrock			---	---	---	---	---	---	---	---
Ashollow--------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	5-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Niobrara--------	0-3	Loamy sand	SM	A-4	0	0	100	100	70-95	35-50	0-15	NP-5
	3-12	Sand, loamy sand	SM	A-2	0	0	100	95-100	55-70	25-40	0-15	NP-5
	12-60	Bedrock			---	---	---	---	---	---	---	---
221:												
Turnercrest-----	0-2	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	2-32	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	32-60	Bedrock			---	---	---	---	---	---	---	---
Keeline---------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	4-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	30-50	15-25	5-10

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
221:(cont.)												
Taluce----------	0-2	Fine sandy loam	SC-SM	A-4	0	0	100	100	70-85	40-55	15-25	5-10
	2-14	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	65-85	35-50	15-25	5-10
	14-60	Bedrock			---	---	---	---	---	---	---	---
223:												
Ucross----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-31	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	31-60	Bedrock			---	---	---	---	---	---	---	---
224:												
Ucross----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-31	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	31-60	Bedrock			---	---	---	---	---	---	---	---
Iwait-----------	0-6	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	6-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	15-25
225:												
Ucross----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-31	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	31-60	Bedrock			---	---	---	---	---	---	---	---
Iwait-----------	0-6	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	6-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	15-25
Fairburn--------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---
228:												
Ulm-------------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-25	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	25-60	Clay loam, clay	CH, CL	A-7, A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
Renohill--------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	24-35	Clay loam, clay	CH, CL	A-7, A-6	0	0	100	95-100	85-100	75-90	40-60	20-40
	35-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
229:												
Ulm-------------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-25	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	25-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
Renohill--------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	24-35	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	15-35
	35-60	Bedrock			---	---	---	---	---	---	---	---
233:												
Ustic Torriorthents, gullied--------	0-4	Loam, clay loam, fine sandy loam	CL	A-4	0	0	100	95-100	80-95	60-75	25-35	5-15
	4-35	Loam, clay loam, fine sandy loam	CL	A-4	0	0	100	95-100	80-95	60-75	25-35	5-15
	35-60	Bedrock			---	---	---	---	---	---	---	---
234:												
Ustic Torriorthents--	0-4	Loam, clay loam, fine sandy loam	CL	A-6, A-4	0	0	100	95-100	80-95	60-75	25-35	5-20
	4-35	Clay loam, loam, fine sandy loam	CL	A-6, A-4	0	0	100	95-100	80-95	60-75	25-35	5-20
	35-60	Bedrock			---	---	---	---	---	---	---	---
Badland---------	0-60	Bedrock			---	---	---	---	---	---	---	---
236:												
Vonalee---------	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-24	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	24-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
236:(cont.)												
Terro	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-16	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	16-30	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	70-90	35-50	15-25	5-10
	30-60	Bedrock			---	---	---	---	---	---	---	---
238:												
Vonalf	0-6	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	6-34	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	34-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Xema	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-22	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	22-31	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	70-90	35-50	15-25	5-10
	31-60	Bedrock			---	---	---	---	---	---	---	---
239:												
Ironbutte	0-4	Channery loam	SC, GC-GM, GC	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	4-12	Very channery loam, extremely channery loam	GC-GM, GC	A-2, A-1	0-5	0-25	30-45	25-40	10-30	5-25	20-35	5-15
	12-60	Fragmental material	GW	A-2, A-1	5-15	60-70	0-10	0-10	0-5	0-5	---	---
Fairburn	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
239:(cont.)												
Mittenbutte-----	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-16	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	75-90	35-50	15-25	5-10
	16-60	Bedrock			---	---	---	---	---	---	---	---
241:												
Ironbutte-------	0-4	Channery loam	SC, GC-GM, GC	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	4-12	Very channery loam, extremely channery loam	GC-GM, GC	A-2, A-1	0-5	0-25	30-45	25-40	10-30	5-25	20-35	5-15
	12-60	Fragmental material	GW	A-2, A-1	5-15	60-70	0-10	0-10	0-5	0-5	---	---
Ironbutte, thin solum----------	0-2	Channery loam	GC-GM, GC	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	2-10	Very channery loam, extremely channery loam	GC-GM, GC	A-1, A-2	0-5	0-25	30-45	25-40	10-30	5-25	20-35	5-15
	10-60	Fragmental material	GW	A-2, A-1	5-15	60-70	0-10	0-10	0-5	0-5	---	---
244:												
Muleherder------	0-2	Channery loam	CL, SC, GC-GM	A-4	0	0	70-85	65-80	50-65	45-60	25-35	5-15
	2-16	Channery loam, very channery loam	SC-SM, GC-GM	A-4	0-5	0-10	65-80	60-75	35-50	30-45	20-35	5-10
	16-33	Extremely channery fine sandy loam, very channery fine sandy loam	GC-GM	A-2, A-1	0-5	5-15	35-50	20-35	10-25	5-25	15-30	5-10
	33-60	Fragmental material	GW	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP
Ironbutte-------	0-4	Channery loam	SC, GC-GM, GC	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	4-12	Very channery loam, extremely channery loam	GC-GM, GC	A-2, A-1	0-5	0-25	30-45	25-40	10-30	5-25	20-35	5-15
	12-60	Fragmental material	GW	A-2, A-1	5-15	60-70	0-10	0-10	0-5	0-5	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
248:												
Ziggy-----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-14	Loam, clay loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	14-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
Iwait-----------	0-6	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	6-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	15-25
249:												
Ziggy-----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-14	Loam, clay loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	14-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
Iwait-----------	0-6	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	6-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	15-25
250:												
Ziggy-----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-14	Loam, clay loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-15
	14-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
Ucross----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-31	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	31-60	Bedrock			---	---	---	---	---	---	---	---
Oldwolf---------	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-21	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	21-32	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
	32-60	Bedrock			---	---	---	---	---	---	---	---
251:												
Water-----------	---	---	---	---	---	---	---	---	---	---	---	---
252:												
Absted----------	0-2	Fine sandy loam	SM	A-4	0	0	95-100	95-100	75-85	35-50	0-25	NP-5
	2-8	Clay loam, clay, silty clay loam	CL, CH	A-7	0	0	95-100	95-100	80-90	70-85	40-55	20-30
	8-13	Clay, silty clay, silty clay loam	CL, CH	A-7	0	0	95-100	95-100	80-90	70-85	40-55	20-30
	13-60	Clay loam, clay, silty clay loam	CL	A-7, A-6	0	0	95-100	95-100	80-90	70-85	35-50	20-30

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
252:(cont.)												
Slickspots------	0-60	Clay, clay loam, silty clay loam	CH, CL	A-7, A-6	0	0	100	95-100	90-100	75-95	35-70	15-45
253:												
Absted----------	0-2	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-30	5-10
	2-8	Clay, clay loam, silty clay loam	CL, CH	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	8-13	Clay, silty clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	13-60	Clay loam, silty clay loam, silty clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-35
Arvada----------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	70-100	35-50	20-30	5-10
	4-14	Clay, clay loam	CL, CH	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	14-20	Clay loam, clay	CL, CH	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	20-60	Clay loam, silty clay loam, silty clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-35
Slickspots------	0-60	Clay, clay loam, silty clay loam	CH, CL	A-7, A-6	0	0	100	95-100	90-100	75-95	35-70	15-45
254:												
Badland---------	0-60	Bedrock			---	---	---	---	---	---	---	---
Lismas----------	0-3	Clay loam	CL	A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-16	Clay	CH	A-7	0	0	100	90-100	85-100	75-90	55-75	35-50
	16-60	Bedrock			---	---	---	---	---	---	---	---
255:												
Bidman----------	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-30	10-15
	3-21	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	20-40
	21-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-35
Parmleed--------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-30	10-15
	4-26	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	20-40
	26-37	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-35
	37-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
256:												
Bidman----------	0-4	Fine sandy loam	SM, SC-SM	A-4	0	0	95-100	90-100	80-90	35-50	0-25	NP-5
	4-14	Clay, clay loam	CL, CH	A-7	0	0	95-100	90-100	80-90	65-80	45-55	20-30
	14-26	Clay, clay loam	CH, CL	A-7	0	0	90-100	85-100	75-90	60-80	45-55	20-30
	26-60	Clay loam, loam	CL	A-6, A-7	0	0	80-100	75-95	65-90	55-75	35-45	15-20
Ulm-------------	0-3	Loam	CL, CL-ML	A-6, A-4	0	0	95-100	95-100	80-100	70-80	25-35	5-15
	3-19	Clay loam, clay	CH, CL	A-7	0	0	95-100	95-100	85-100	70-80	45-60	25-35
	19-60	Clay loam, clay	CL, CH	A-7	0	0	95-100	95-100	85-100	65-80	40-55	20-30
257:												
Bonfri, deep----	0-6	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	6-19	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	19-34	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	34-58	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	58-60	Bedrock			---	---	---	---	---	---	---	---
Bonfri----------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-19	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	19-29	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	29-60	Bedrock			---	---	---	---	---	---	---	---
258:												
Bonfri----------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-22	Clay loam, loam	CL	A-6	0	0	100	100	90-100	60-80	30-40	10-20
	22-32	Loam, clay loam	CL	A-6	0	0	100	95-100	75-95	60-75	30-40	10-20
	32-60	Bedrock			---	---	---	---	---	---	---	---
Kirby-----------	0-4	Channery loam	SC	A-6	0	0-5	65-80	65-75	40-60	35-55	25-35	10-15
	4-17	Very channery loam, extremely channery loam	GC-GM, GC	A-2	0-5	5-20	35-50	25-40	15-35	5-25	20-35	5-15
	17-60	Fragmental material	GW	A-2, A-1	5-15	60-70	0-10	0-10	0-5	0-5	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
259:												
Bonfri----------	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-20	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	20-30	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	30-60	Bedrock			---	---	---	---	---	---	---	---
Twilight--------	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-20	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	20-29	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	29-60	Bedrock			---	---	---	---	---	---	---	---
Blacksheep------	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-16	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	75-90	30-50	15-25	5-10
	16-60	Bedrock			---	---	---	---	---	---	---	---
260:												
Cabbart, wooded-	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-16	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	16-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
260:(cont.)												
Volborg, wooded-	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-3	Clay loam	CL	A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-16	Clay, silty clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	40-65	20-40
	16-60	Bedrock			---	---	---	---	---	---	---	---
Badland---------	0-60	Bedrock			---	---	---	---	---	---	---	---
261:												
Cabbart---------	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---
Yawdim----------	0-3	Clay loam	CL	A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-16	Clay, silty clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	40-65	20-40
	16-60	Bedrock			---	---	---	---	---	---	---	---
Badland---------	0-60	Bedrock			---	---	---	---	---	---	---	---
262:												
Cambria---------	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-8	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-20
	8-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
Kishona---------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
Zigweid---------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-17	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-20
	17-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
263:												
Cedar Butte-----	0-7	Very fine sandy loam	CL-ML	A-4	0	0	100	100	85-100	50-65	20-25	5-10
	7-15	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	15-26	Silty clay, clay	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	26-60	Silty clay loam, silty clay	CL, CH	A-7, A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
Slickspots------	0-60	Clay, clay loam, silty clay loam	CH, CL	A-7, A-6	0	0	100	95-100	90-100	75-95	35-70	15-45
264:												
Clarkelen-------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-55	20-25	5-10
	5-60	Stratified loamy fine sand to loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Draknab---------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	5-60	Stratified fine sand to fine sandy loam	SM	A-2	0	0	100	95-100	40-55	20-35	0-20	NP-5
265:												
Clarkelen-------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-55	20-25	5-10
	5-60	Stratified loamy fine sand to loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Draknab---------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	5-60	Stratified fine sand to fine sandy loam	SM	A-2	0	0	100	95-100	40-55	20-35	0-20	NP-5
Boruff----------	0-2	Silty clay	CH	A-7	0	0	100	100	90-100	90-100	55-75	35-50
	2-60	Stratified fine sandy loam to silty clay	CH, CL	A-7	0	0	100	95-100	85-100	80-95	45-70	25-45

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
266:												
Coaliams, moderately saline---------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-22	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-20
	22-60	Stratified fine sandy loam to clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
267:												
Cromack---------	0-6	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	6-14	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	14-29	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	35-65	20-40
	29-60	Bedrock			---	---	---	---	---	---	---	---
Samsil----------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	4-16	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	40-65	25-40
	16-60	Bedrock			---	---	---	---	---	---	---	---
268:												
Decolney--------	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-22	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	22-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	20-25	5-10
Hiland----------	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-30	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	30-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	20-25	5-10
269:												
Decolney--------	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-22	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	22-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	20-25	5-10
Hiland----------	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-30	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	30-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	20-25	5-10

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
270:												
Deekay----------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-24	Clay loam, sandy clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	24-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-100	60-75	30-45	10-25
Deekay, stratified substratum-----	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-25	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	25-60	Stratified fine sandy loam to loam	CL	A-6	0	0	100	90-100	80-95	60-75	30-45	10-25
271:												
Delpoint--------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-17	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	17-33	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	33-60	Bedrock			---	---	---	---	---	---	---	---
Cabbart---------	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---
272:												
Delpoint--------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-17	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	17-33	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	33-60	Bedrock			---	---	---	---	---	---	---	---
Yamacall--------	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-15	Loam, clay loam	CL	A-6	0	0	100	100	85-100	65-80	30-40	10-20
	15-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
Cabbart---------	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
273:												
Delpoint, wooded	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-18	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-25
	18-34	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-25
	34-60	Bedrock			---	---	---	---	---	---	---	---
Yamacall, wooded	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-16	Loam, clay loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-20
	16-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
Cabbart, wooded-	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-16	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	16-60	Bedrock			---	---	---	---	---	---	---	---
274:												
Denied access---	---	---	---	---	---	---	---	---	---	---	---	---
275:												
Echeta----------	0-3	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-15	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	15-60	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	35-65	20-40
Moorhead--------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	24-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
276:												
Elwop, wooded---	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-5	Fine sandy loam	SC-SM, SC	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-25	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	25-35	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	35-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
276:(cont.)												
Mittenbutte, wooded	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-16	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	75-90	35-50	15-25	5-10
	16-60	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
277:												
Fairburn	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---
Mittenbutte	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-16	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	75-90	35-50	15-25	5-10
	16-60	Bedrock			---	---	---	---	---	---	---	---
Badland	0-60	Bedrock			---	---	---	---	---	---	---	---
278:												
Fairburn	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---
Samsil	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	4-16	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	40-65	25-40
	16-60	Bedrock			---	---	---	---	---	---	---	---
Badland	0-60	Bedrock			---	---	---	---	---	---	---	---
279:												
Fairburn, wooded	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-16	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	16-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
279:(cont.)												
Samsil, wooded--	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-5	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	5-16	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	40-65	25-40
	16-60	Bedrock			---	---	---	---	---	---	---	---
Badland---------	0-60	Bedrock			---	---	---	---	---	---	---	---
280:												
Felix-----------	0-5	Clay	CH	A-7	0	0	100	100	100	90-100	70-90	45-60
	5-30	Clay	CH	A-7	0	0	100	100	100	90-100	75-90	50-65
	30-50	Clay	CH	A-7	0	0	100	100	100	90-100	75-90	50-60
	50-60	Clay	CH	A-7	0	0	100	100	100	90-100	65-85	40-55
281:												
Foreleft--------	0-4	Loam	CL	A-6	0	0	100	100	85-95	60-75	25-35	10-15
	4-26	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-20
	26-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
282:												
Foreleft--------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-26	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-40	10-20
	26-60	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
Bonfri----------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-22	Clay loam, loam	CL	A-6	0	0	100	100	90-100	60-80	30-40	10-20
	22-32	Loam, clay loam	CL	A-6	0	0	100	95-100	75-95	60-75	30-45	10-25
	32-60	Bedrock			---	---	---	---	---	---	---	---
283:												
Gateson, wooded-	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-13	Stratified fine sandy loam to sandy clay loam	SC-SM, SC	A-4	0	0	100	100	85-100	40-55	20-35	5-15
	13-21	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	21-37	Stratified fine sandy loam to sandy clay loam	SC-SM, SC	A-4	0	0	100	95-100	80-95	35-50	20-35	5-15
	37-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
283:(cont.)												
Xema, wooded----	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-17	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-30	5-10
	17-38	Stratified fine sandy loam to sandy clay loam	SC-SM	A-4	0	0	100	95-100	80-95	35-50	15-30	5-10
	38-60	Bedrock			---	---	---	---	---	---	---	---
Mittenbutte, wooded---------	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-13	Fine sandy loam	SC-SM	A-4	0	0	100	90-100	75-90	35-50	15-25	5-10
	13-60	Bedrock			---	---	---	---	---	---	---	---
284:												
Haverdad--------	0-5	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-40	15-20
	5-60	Stratified fine sandy loam to clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	25-40	10-20
285:												
Haverdad--------	0-4	Loam	CL	A-6	0	0	100	100	85-95	60-75	25-35	10-15
	4-60	Stratified fine sandy loam to loam	CL	A-6	0	0	100	95-100	75-95	50-70	25-40	10-20
Boruff----------	0-2	Silty clay	CH	A-7	0	0	100	100	90-100	90-100	55-75	35-50
	2-60	Stratified fine sandy loam to silty clay	CH, CL	A-7	0	0	100	95-100	85-100	80-95	40-70	20-45
286:												
Havre-----------	0-6	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	6-60	Stratified fine sandy loam to clay loam	CL	A-6	0	0	100	90-100	80-95	60-75	25-40	10-20

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
286:(cont.)												
Bigsandy--------	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-10	Stratified loam to silty clay loam	CL	A-6	0	0	100	100	85-100	65-90	20-40	10-20
	10-60	Stratified fine sandy loam to silty clay loam	CL	A-6	0	0	100	90-100	80-95	60-75	20-40	10-20
287:												
Hiland----------	0-4	Fine sandy loam	SM	A-4	0	0	95-100	90-100	75-85	35-45	0-25	NP-5
	4-30	Sandy clay loam	SC, CL	A-6	0	0	95-100	90-100	75-85	40-60	30-40	10-20
	30-60	Sandy loam, fine sandy loam	SM, SC-SM	A-2, A-4	0	0	95-100	90-100	65-80	25-45	0-30	NP-10
Bowbac----------	0-4	Sandy loam	SM, SC-SM	A-4	0	0	90-100	90-100	80-95	40-50	0-25	NP-10
	4-15	Sandy clay loam	CL	A-6	0	0	90-100	90-100	80-95	50-70	25-35	10-20
	15-24	Sandy loam, fine sandy loam	SM, SC-SM	A-4	0	0	85-100	80-100	80-95	35-50	0-30	NP-10
	24-60	Bedrock			---	---	---	---	---	---	---	---
288:												
Hiland----------	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-30	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	30-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	20-25	5-10
Bowbac----------	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-31	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	31-39	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	20-25	5-10
	39-60	Bedrock			---	---	---	---	---	---	---	---
289:												
Hiland----------	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-30	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	30-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	20-25	5-10

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
289:(cont.)												
Bowbac----------	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-31	Sandy clay loam	CL, SC	A-6	0	0	100	100	85-100	45-60	30-40	10-20
	31-39	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	20-25	5-10
	39-60	Bedrock			---	---	---	---	---	---	---	---
290:												
Hiland----------	0-2	Fine sandy loam	SM	A-4	0	0	95-100	90-100	75-85	35-45	0-25	NP-5
	2-27	Sandy clay loam	SC, CL	A-6	0	0	95-100	90-100	75-85	40-60	30-40	10-20
	27-60	Sandy loam, fine sandy loam	SC-SM, SM	A-2, A-4	0	0	95-100	90-100	65-80	25-45	0-30	NP-10
Decolney--------	0-2	Loamy sand	SM	A-2	0	0	100	100	65-75	15-25	0-15	NP-5
	2-11	Sandy clay loam	SC, CL	A-6	0	0	100	100	80-90	40-60	30-40	10-20
	11-60	Sandy loam, sandy clay loam	SC-SM	A-2, A-4	0	0	100	100	70-80	30-50	20-30	5-15
291:												
Ironbutte, wooded---------	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-5	Channery loam	SC, GC-GM, GC	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	5-13	Very channery loam, extremely channery loam	GC-GM, GC	A-2, A-1	0-5	0-25	30-45	25-40	10-30	5-25	20-35	5-15
	13-60	Fragmental material	GW	A-2, A-1	5-15	60-70	0-10	0-10	0-5	0-5	---	---
Fairburn, wooded	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-16	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	16-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
291:(cont.)												
Mittenbutte, wooded---------	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-16	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	75-90	35-50	15-25	5-10
	16-60	Bedrock			---	---	---	---	---	---	---	---
292:												
Jaywest---------	0-7	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	7-36	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	36-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	35-55	15-35
Jaywest, stratified substratum-----	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-23	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	75-90	40-65	20-40
	23-60	Stratified fine sandy loam to clay loam	CL	A-6	0	0	100	90-100	80-95	65-80	30-45	10-25
293:												
Jaywest, saline substratum-----	0-7	Very fine sandy loam	CL-ML	A-4	0	0	100	100	85-100	50-65	20-25	5-10
	7-15	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	15-30	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	30-60	Clay loam, loam	CL	A-6	0	0	100	95-100	85-100	75-90	35-55	15-35
Cedar Butte-----	0-7	Very fine sandy loam	CL-ML	A-4	0	0	100	100	85-100	50-65	20-30	5-10
	7-15	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	15-26	Clay, silty clay	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	26-60	Silty clay loam, silty clay	CL, CH	A-7, A-6	0	0	100	95-100	85-100	75-95	35-60	20-35
Slickspots------	0-60	Clay, clay loam, silty clay loam	CH, CL	A-7, A-6	0	0	100	95-100	90-100	75-95	35-70	15-45

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
294:												
Kirby, wooded---	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-5	Channery loam	SC	A-6	0	0-5	65-80	65-75	40-60	35-55	25-35	10-15
	5-18	Very channery loam, extremely channery loam	GC, GC-GM	A-2	0-5	5-20	35-50	25-40	15-35	5-25	20-35	5-15
	18-60	Fragmental material	GW	A-2, A-1	5-15	60-70	0-10	0-10	0-5	0-5	---	---
Cabbart, wooded-	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-16	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	16-60	Bedrock			---	---	---	---	---	---	---	---
Blacksheep, wooded---------	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-16	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	75-90	30-50	15-25	5-10
	16-60	Bedrock			---	---	---	---	---	---	---	---
295:												
Lismas----------	0-3	Clay loam	CL	A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-16	Clay	CH	A-7	0	0	100	90-100	85-100	75-90	55-75	35-50
	16-60	Bedrock			---	---	---	---	---	---	---	---
Sabatka---------	0-3	Clay loam	CL	A-7, A-6	0	0	100	100	90-100	70-85	35-55	20-35
	3-19	Clay, clay loam	CH	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	19-30	Clay, clay loam	CH	A-7	0	0	100	95-100	85-100	75-90	35-60	20-40
	30-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
295:(cont.)												
Xema	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-18	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	18-33	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	33-60	Bedrock			---	---	---	---	---	---	---	---
296:												
Megonot	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	4-15	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	15-33	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	40-65	20-40
	33-60	Bedrock			---	---	---	---	---	---	---	---
Yawdim	0-3	Clay loam	CL	A-7	0	0	100	100	90-100	70-85	35-55	20-35
	3-16	Clay, silty clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	40-65	20-40
	16-60	Bedrock			---	---	---	---	---	---	---	---
297:												
Muleherder, wooded	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-3	Channery loam	SC, SC-SM	A-4	0	0	70-85	65-80	50-65	45-60	25-35	5-15
	3-17	Channery loam, very channery loam	SC-SM, GC-GM	A-4	0-5	0-10	65-80	60-75	35-50	30-45	20-35	5-10
	17-34	Extremely channery fine sandy loam, very channery fine sandy loam	GC-GM	A-1, A-2	0-5	5-15	35-50	20-35	10-25	5-25	15-30	5-10
	34-60	Fragmental material	GW	A-1	5-15	60-70	0-10	0-10	0-5	0-5	0-0	NP

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
297:(cont.)												
Ironbutte, wooded	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-5	Channery loam	SC, GC-GM, GC	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	5-13	Very channery loam, extremely channery loam	GC-GM, GC	A-1, A-2	0-5	0-25	30-45	25-40	10-30	5-25	20-35	5-15
	13-60	Fragmental material	GW	A-2, A-1	5-15	60-70	0-10	0-10	0-5	0-5	---	---
298:												
Nuncho	0-5	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-40	15-20
	5-25	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	25-60	Clay loam, clay	CL	A-6, A-7	0	0	100	95-100	85-100	75-90	35-60	20-35
299:												
Oldwolf	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-21	Clay loam, loam	CL	A-6	0	0	100	100	90-100	65-80	30-45	10-25
	21-32	Loam, clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-45	10-25
	32-60	Bedrock			---	---	---	---	---	---	---	---
Fairburn	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---
300:												
Oshoto	0-7	Silt loam	CL-ML	A-4	0	0	100	100	85-100	70-85	20-25	5-10
	7-32	Silty clay loam, clay loam	CL	A-6	0	0	100	100	90-100	75-90	30-35	10-15
	32-60	Silt loam, silty clay loam	CL	A-6	0	0	100	95-100	85-100	65-80	25-35	10-15
Klinedraw	0-4	Silt loam	CL-ML	A-4	0	0	100	100	85-100	70-85	20-25	5-10
	4-24	Silty clay loam, clay loam	CL	A-6	0	0	100	100	90-100	75-90	30-35	10-15
	24-32	Silt loam, loam, silty clay loam	CL	A-6	0	0	100	95-100	85-100	65-80	25-35	10-15
	32-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
301:												
Oshoto----------	0-7	Silt loam	CL-ML	A-4	0	0	100	100	85-100	70-85	20-25	5-10
	7-32	Silty clay loam, clay loam	CL	A-6	0	0	100	100	90-100	75-90	30-35	10-15
	32-60	Silt loam, silty clay loam	CL	A-6	0	0	100	95-100	85-100	65-80	25-35	10-15
Klinedraw-------	0-4	Silt loam	CL-ML	A-4	0	0	100	100	85-100	70-85	20-25	5-10
	4-24	Silty clay loam, clay loam	CL	A-6	0	0	100	100	90-100	75-90	30-35	10-15
	24-32	Silt loam, loam, silty clay loam	CL	A-6	0	0	100	95-100	85-100	65-80	25-35	10-15
	32-60	Bedrock			---	---	---	---	---	---	---	---
302:												
Oshoto----------	0-7	Silt loam	CL-ML	A-4	0	0	100	100	85-100	70-85	20-25	5-10
	7-32	Silty clay loam, clay loam	CL	A-6	0	0	100	100	90-100	75-90	30-35	10-15
	32-60	Silt loam, silty clay loam	CL	A-6	0	0	100	95-100	85-100	65-80	25-35	10-15
Moorhead--------	0-3	Silty clay loam	CL	A-6	0	0	100	100	90-100	85-95	30-40	10-20
	3-24	Silty clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	90-100	40-65	25-40
	24-60	Silty clay loam, clay loam, clay	CL	A-6	0	0	100	95-100	85-100	80-90	25-60	15-40
303:												
Oshoto----------	0-7	Silt loam	CL-ML	A-4	0	0	100	100	85-100	70-85	20-25	5-10
	7-32	Silty clay loam, clay loam	CL	A-6	0	0	100	100	90-100	75-90	30-35	10-15
	32-60	Silt loam, silty clay loam	CL	A-6	0	0	100	95-100	85-100	65-80	25-35	10-15

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
303:(cont.)												
Ziggy-----------	0-4	Silt loam	CL-ML	A-4	0	0	100	100	85-100	70-85	20-25	5-10
	4-17	Silty clay loam, clay loam, silt loam	CL	A-6	0	0	100	100	90-100	75-90	25-35	10-15
	17-60	Silt loam, silty clay loam	CL	A-6	0	0	100	95-100	85-100	65-80	25-35	10-15
304:												
Parmleed--------	0-4	Fine sandy loam	SC-SM	A-4	0	0	95-100	95-100	75-85	35-50	20-30	5-10
	4-17	Clay, clay loam	CH, CL	A-7	0	0	95-100	95-100	85-95	85-95	45-60	25-35
	17-30	Clay loam	CL	A-6, A-7	0	0	95-100	85-100	70-85	65-80	35-45	15-25
	30-60	Bedrock			---	---	---	---	---	---	---	---
Bidman----------	0-2	Fine sandy loam	SM	A-4	0	0	95-100	90-100	80-90	35-50	0-25	NP-5
	2-17	Clay, clay loam	CH, CL	A-7	0	0	95-100	90-100	80-90	65-80	45-55	20-30
	17-25	Clay, clay loam	CH, CL	A-7	0	0	90-100	85-100	75-90	60-80	45-55	20-30
	25-60	Clay loam, loam	CL	A-6, A-7	0	0	80-100	75-95	65-90	55-75	35-45	15-20
305:												
Pinehill--------	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-31	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	31-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-55	15-35
306:												
Pinehill--------	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-31	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	31-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-55	15-35
Pylon-----------	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-21	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-70	20-45
	21-30	Clay loam, clay	CL	A-7, A-6	0	0	100	95-100	85-100	75-90	35-60	15-40
	30-60	Bedrock			---	---	---	---	---	---	---	---
307:												
Pinehill, loam--	0-6	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	6-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	24-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-55	15-35
Pinehill, clay loam-----------	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-31	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	31-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-55	15-35

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
308:												
Pinehill--------	0-6	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	6-24	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	24-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-55	15-35
Pylon-----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-21	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-70	20-45
	21-34	Clay loam, clay	CL	A-7, A-6	0	0	100	95-100	85-100	75-90	35-60	15-40
	34-60	Bedrock			---	---	---	---	---	---	---	---
309:												
Pitchdraw-------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	4-31	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	20-25	5-10
	31-60	Bedrock			---	---	---	---	---	---	---	---
Ashollow--------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	5-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Mittenbutte-----	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-16	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	75-90	35-50	15-25	5-10
	16-60	Bedrock			---	---	---	---	---	---	---	---
310:												
Rockypoint------	0-3	Loam	CL	A-6	0	0	100	100	85-95	60-75	25-35	10-15
	3-60	Stratified fine sandy loam to clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	25-40	10-20
311:												
Rockypoint------	0-3	Loam	CL	A-6	0	0	100	100	85-95	60-75	25-35	10-15
	3-60	Stratified fine sandy loam to clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	25-40	10-20
Boruff----------	0-2	Silty clay	CH	A-7	0	0	100	100	90-100	90-100	55-75	35-50
	2-60	Stratified fine sandy loam to silty clay	CH, CL	A-7	0	0	100	95-100	85-100	80-95	40-70	20-45

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
312:												
Rockypoint------	0-3	Loam	CL	A-6	0	0	100	100	85-95	60-75	25-35	10-15
	3-60	Stratified fine sandy loam to clay loam	CL	A-6	0	0	100	95-100	80-95	60-75	25-40	10-20
Sodawells-------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-60	Stratified loamy fine sand to silt loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
313:												
Savageton-------	0-6	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	6-20	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	20-29	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	40-65	25-40
	29-60	Bedrock			---	---	---	---	---	---	---	---
Samday----------	0-2	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	2-16	Clay, clay loam	CH, CL	A-7	0	0	100	90-100	85-100	75-90	40-65	25-40
	16-60	Bedrock			---	---	---	---	---	---	---	---
314:												
Savageton-------	0-6	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	6-20	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	20-29	Clay, clay loam	CH, CL	A-7	0	0	100	95-100	85-100	75-90	40-65	25-40
	29-60	Bedrock			---	---	---	---	---	---	---	---
Silhouette------	0-2	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	2-28	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	28-60	Clay loam, clay	CL	A-7, A-6	0	0	100	95-100	85-100	75-90	35-65	20-40
315:												
Shingle---------	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-12	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---
Taluce----------	0-2	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	2-18	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	70-85	35-50	15-25	5-10
	18-60	Bedrock			---	---	---	---	---	---	---	---
Badland---------	0-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
316:												
Shingle, wooded-	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-13	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	13-60	Bedrock			---	---	---	---	---	---	---	---
Taluce, wooded--	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-19	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	70-85	35-50	15-25	5-10
	19-60	Bedrock			---	---	---	---	---	---	---	---
Badland---------	0-60	Bedrock			---	---	---	---	---	---	---	---
317:												
Silhouette------	0-2	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-55	20-35
	2-28	Clay loam, clay	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	25-40
	28-60	Clay loam, clay	CL	A-7, A-6	0	0	100	95-100	85-100	75-90	35-65	20-40
Ulm-------------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-25	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	25-60	Clay loam, clay	CH, CL	A-7, A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
318:												
Sodawells-------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-60	Stratified loamy fine sand to silt loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Pathfinder------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-60	Stratified fine sand to loamy fine sand	SM	A-2	0	0	100	95-100	40-55	20-35	0-20	NP-5
Boruff----------	0-2	Silty clay	CH	A-7	0	0	100	100	90-100	90-100	55-75	35-50
	2-60	Stratified fine sandy loam to silty clay	CH, CL	A-7	0	0	100	95-100	85-100	80-95	40-70	20-45

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
319:												
Spottedhorse----	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-27	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	40-65	20-40
	27-35	Clay loam, clay	CL	A-7, A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
	35-60	Bedrock			---	---	---	---	---	---	---	---
Leiter----------	0-3	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	3-22	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	22-33	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
	33-60	Bedrock			---	---	---	---	---	---	---	---
320:												
Stetter---------	0-3	Silty clay	CH	A-7	0	0	100	100	90-100	90-100	55-75	35-50
	3-60	Stratified silt loam to silty clay	CH	A-7	0	0	100	100	90-100	85-100	55-75	35-50
321:												
Swanboy---------	0-4	Clay	CH	A-7	0	0	100	100	95-100	90-100	45-65	25-40
	4-45	Clay, silty clay	CH	A-7	0	0	100	100	95-100	90-100	70-80	45-60
	45-60	Clay, silty clay	CH	A-7	0	0	100	100	95-100	90-100	70-80	45-60
Cedar Butte-----	0-2	Silt loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	85-100	20-30	5-15
	2-14	Silty clay loam, silty clay	CH, CL	A-6, A-7	0	0	100	100	95-100	90-100	35-65	20-40
	14-35	Silty clay loam, silty clay	CL, CH	A-6, A-7	0	0	100	100	95-100	90-100	35-65	20-40
	35-60	Silty clay, clay	CL, CH	A-7, A-6	0	0	100	100	100	90-100	35-65	20-40
Slickspots------	0-60	Clay, clay loam, silty clay loam	CH, CL	A-7, A-6	0	0	100	95-100	90-100	75-95	35-70	15-45
322:												
Toby------------	0-7	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	7-33	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	33-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
322:(cont.)												
Twilight--------	0-5	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	5-20	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	20-29	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
	29-60	Bedrock			---	---	---	---	---	---	---	---
Blacksheep------	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-15	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	75-90	30-50	15-25	5-10
	15-60	Bedrock			---	---	---	---	---	---	---	---
323:												
Ucross----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-31	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	31-60	Bedrock			---	---	---	---	---	---	---	---
Fairburn--------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---
324:												
Ucross----------	0-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-31	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	31-60	Bedrock			---	---	---	---	---	---	---	---
Fairburn--------	0-4	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	4-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---
325:												
Ucross, wooded--	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-6	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	6-32	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	32-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
325:(cont.)												
Fairburn, wooded	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-15	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	15-60	Bedrock			---	---	---	---	---	---	---	---
326:												
Ucross, wooded--	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-6	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	6-32	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	10-20
	32-60	Bedrock			---	---	---	---	---	---	---	---
Iwait, wooded---	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-7	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	7-60	Clay loam, loam	CL	A-6	0	0	100	95-100	80-95	60-75	30-40	15-25
Fairburn, wooded	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-5	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	5-16	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	16-60	Bedrock			---	---	---	---	---	---	---	---
327:												
Ulm-------------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-25	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	25-60	Clay loam, clay	CH, CL	A-7, A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
Bidman----------	0-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-30	10-15
	3-21	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	20-40
	21-60	Clay loam, clay	CL	A-6	0	0	100	95-100	85-100	75-90	35-60	20-35
328:												
Ulm-------------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-25	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	25-60	Clay loam, clay	CH, CL	A-7, A-6	0	0	100	95-100	85-100	75-90	35-60	20-40

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
329:												
Ulm-------------	0-9	Clay loam	CL	A-6	0	0	95-100	95-100	80-100	70-80	35-40	15-20
	9-22	Clay loam, clay	CH, CL	A-7	0	0	95-100	95-100	85-100	70-80	45-60	25-35
	22-60	Clay loam, clay	CL, CH	A-7	0	0	95-100	95-100	85-100	65-80	40-55	20-30
330:												
Ulm-------------	0-4	Clay loam	CL	A-6	0	0	100	100	90-100	70-85	35-45	15-25
	4-25	Clay, clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	25-60	Clay loam, clay	CH, CL	A-7, A-6	0	0	100	95-100	85-100	75-90	35-60	20-40
331:												
Valent----------	0-3	Loamy sand	SM	A-4	0	0	100	100	70-95	35-50	0-25	NP-5
	3-60	Loamy sand, sand	SM	A-2	0	0	100	100	40-55	20-35	0-20	NP-5
Duneland--------	0-60	Loamy sand, sand	SM	A-2	0	0	100	100	40-55	20-35	0-20	NP-5
332:												
Vanstel---------	0-4	Silt loam	CL-ML	A-4	0	0	100	100	85-100	70-85	20-25	5-10
	4-19	Silty clay loam, clay loam	CL	A-6	0	0	100	100	90-100	75-90	30-35	10-15
	19-60	Silt loam, silty clay loam	CL	A-6	0	0	100	95-100	85-100	65-80	25-35	10-15
Pinehill--------	0-4	Silty clay loam	CL	A-6	0	0	100	100	90-100	80-95	35-45	15-25
	4-23	Silty clay, silty clay loam	CH, CL	A-7	0	0	100	100	90-100	80-95	45-65	25-40
	23-60	Silty clay loam, clay loam, clay	CL	A-6	0	0	100	95-100	85-100	80-95	35-55	15-35
333:												
Vonalee---------	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	3-24	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	24-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
333:(cont.)												
Terro-----------	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	15-25	5-10
	3-16	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	16-30	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	70-90	35-50	15-25	5-10
	30-60	Bedrock			---	---	---	---	---	---	---	---
Taluce----------	0-2	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	2-18	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	70-85	35-50	15-25	5-10
	18-60	Bedrock			---	---	---	---	---	---	---	---
334:												
Vonalf----------	0-6	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	6-34	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	34-60	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	95-100	75-90	35-50	15-25	5-10
Xema------------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-22	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	22-31	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	70-90	35-50	15-25	5-10
	31-60	Bedrock			---	---	---	---	---	---	---	---
Mittenbutte-----	0-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-16	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	75-90	35-50	15-25	5-10
	16-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
335:												
Wibaux----------	0-3	Channery loam	SC, SC-SM	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-15
	3-14	Extremely channery loam, very channery loam	GC-GM	A-1	0-5	0-25	30-45	25-40	15-30	5-25	20-30	5-10
	14-60	Fragmental material	GW	A-2, A-1	5-15	60-70	0-10	0-10	0-5	0-5	---	---
Shingle---------	0-2	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	2-12	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	12-60	Bedrock			---	---	---	---	---	---	---	---
Taluce----------	0-2	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	2-18	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	70-85	35-50	15-25	5-10
	18-60	Bedrock			---	---	---	---	---	---	---	---
336:												
Wibaux, wooded--	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-4	Channery loam	SC-SM	A-4	0	0-5	65-80	60-75	40-60	35-50	25-35	5-10
	4-15	Very channery loam, extremely channery loam	GC-GM	A-1	0-5	0-25	30-45	25-40	15-30	5-25	20-30	5-10
	15-60	Fragmental material	GW	A-2, A-1	5-15	60-70	0-10	0-10	0-5	0-5	---	---
Shingle, wooded-	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-3	Loam	CL	A-6	0	0	100	100	85-100	60-75	25-35	10-15
	3-13	Loam, clay loam	CL	A-6	0	0	100	90-100	75-90	60-75	30-40	10-20
	13-60	Bedrock			---	---	---	---	---	---	---	---

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
336:(cont.)												
Taluce, wooded--	0-1	Slightly decomposed plant material	PT		0	0	100	100	---	---	---	---
	1-3	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	3-19	Fine sandy loam, sandy loam	SC-SM	A-4	0	0	100	90-100	70-85	35-50	15-25	5-10
	19-60	Bedrock			---	---	---	---	---	---	---	---
337:												
Winler----------	0-4	Clay	CH	A-7	0	0	100	100	100	90-100	70-80	45-55
	4-12	Clay	CH	A-7	0	0	100	100	100	90-100	75-80	50-60
	12-24	Clay	CH	A-7	0	0	100	100	100	90-100	75-80	50-60
	24-32	Clay	CH	A-7	0	0	100	95-100	95-100	90-100	75-80	50-60
	32-60	Bedrock			---	---	---	---	---	---	---	---
Twotop----------	0-3	Clay	CH	A-7	0	0	100	100	100	90-100	70-80	45-55
	3-14	Clay	CH	A-7	0	0	100	100	100	90-100	75-80	50-60
	14-27	Clay	CH	A-7	0	0	100	100	100	90-100	75-80	50-60
	27-60	Clay	CH	A-7	0	0	100	95-100	95-100	90-100	75-80	50-60
338:												
Zigweid---------	0-4	Loam	CL	A-6	0	0	95-100	95-100	80-90	65-75	25-35	10-15
	4-13	Loam, clay loam	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
	13-60	Loam, clay loam	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
Cambria---------	0-3	Loam	CL, CL-ML	A-6, A-4	0	0	95-100	95-100	85-95	60-70	25-35	5-15
	3-11	Clay loam, silty clay loam	CL	A-6	0	0	95-100	95-100	85-95	70-80	35-40	15-20
	11-60	Loam, clay loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	95-100	95-100	65-95	60-80	20-40	5-15
339:												
Zigweid---------	0-1	Fine sandy loam	SM	A-4	0	0	95-100	95-100	80-90	40-50	0-25	NP-5
	1-11	Loam, clay loam	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
	11-60	Loam, clay loam	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
Kishona---------	0-5	Loam	CL	A-6	0	0	95-100	90-100	75-85	55-75	30-35	10-15
	5-60	Loam, clay loam, silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20

Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
339:(cont.)												
Cambria---------	0-2	Loam	CL, CL-ML	A-6, A-4	0	0	95-100	95-100	85-95	60-70	25-35	5-15
	2-6	Clay loam, silty clay loam	CL	A-6	0	0	95-100	95-100	85-95	70-80	35-40	15-20
	6-60	Loam, clay loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	95-100	95-100	65-95	60-80	20-40	5-15

Physical Soil Properties

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
103:														
Arwite--------------	0-5	60-80	10-20	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-32	45-65	10-20	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	32-60	55-75	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
105:														
Arwite--------------	0-5	60-80	10-20	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-32	45-65	10-20	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	32-60	55-75	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Elwop---------------	0-4	60-80	10-20	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	3	3	86
	4-24	45-65	10-20	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	24-35	55-75	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	35-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
106:														
Arwite--------------	0-5	60-80	10-20	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-32	45-65	10-20	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	32-60	55-75	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Elwop---------------	0-4	60-80	10-20	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	3	3	86
	4-24	45-65	10-20	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	24-35	55-75	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	35-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
107:														
Arwite--------------	0-5	60-80	10-20	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-32	45-65	10-20	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	32-60	55-75	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Vonalf--------------	0-6	60-80	15-25	8-15	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	6-34	60-80	10-20	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	34-60	60-80	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
122:														
Cushman-------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	2-23	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-30	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	30-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Cambria-------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-10	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.32	.32			
	10-60	25-45	35-45	20-30	1.35-1.45	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
131:														
Deekay--------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-24	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
132:														
Deekay--------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-24	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Moorhead------------	0-5	30-50	30-40	20-27	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	5-35	20-40	25-40	35-45	1.25-1.35	0.2-0.6	0.18-0.20	6.0-8.9	0.5-1.0	.37	.37			
	35-60	25-45	25-40	30-42	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
133:														
Deekay--------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-24	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Moorhead------------	0-5	30-50	30-40	20-27	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	5-35	20-40	25-40	35-45	1.25-1.35	0.2-0.6	0.18-0.20	6.0-8.9	0.5-1.0	.37	.37			
	35-60	25-45	25-40	30-42	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
134:														
Deekay--------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-24	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Oldwolf-------------	0-3	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	3-21	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	21-32	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	32-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
135:														
Deekay--------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-24	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Oldwolf-------------	0-3	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	3-21	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	21-32	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	32-60	---	---	---	---	0.00-0.2	---	---	---	---	---			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
136:														
Deekay--------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-24	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Ziggy---------------	0-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	5-14	25-45	35-45	20-35	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.37	.37			
	14-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
137:														
Echeta--------------	0-3	25-45	25-35	30-40	1.15-1.25	0.2-0.6	0.19-0.21	6.0-8.9	1.0-3.0	.32	.32	5	4L	86
	3-15	20-40	20-30	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	15-60	25-45	20-30	30-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
138:														
Echeta--------------	0-3	25-45	25-35	30-40	1.15-1.25	0.2-0.6	0.19-0.21	6.0-8.9	1.0-3.0	.32	.32	5	4L	86
	3-15	20-40	20-30	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	15-60	25-45	20-30	30-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
Cromack-------------	0-6	25-45	25-35	30-40	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-3.0	.32	.32	3	4L	86
	6-14	20-40	20-30	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	14-29	25-45	20-30	30-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	29-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
144:														
Forkwood------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-23	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
146:														
Forkwood------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-23	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Cushman-------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	2-23	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-30	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	30-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
147:														
Forkwood------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-23	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
147:(cont.)														
Cushman-------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	2-23	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-30	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	30-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
148:														
Forkwood------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-23	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Ulm-----------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-22	20-40	25-35	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	22-60	25-45	25-35	25-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
149:														
Forkwood------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-23	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Ulm-----------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-22	20-40	25-35	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	22-60	25-45	25-35	25-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
151:														
Haverdad------------	0-4	25-45	35-55	15-25	1.15-1.25	0.6-2	0.14-0.16	0.0-2.9	1.0-2.0	.32	.32	5	4L	86
	4-60	25-45	30-50	18-35	1.25-1.35	0.6-2	0.14-0.16	0.0-2.9	0.0-0.5	.37	.37			
155:														
Heldt, saline-------	0-2	25-45	25-35	30-40	1.15-1.25	0.2-0.6	0.15-0.17	6.0-8.9	1.0-2.0	.37	.37	5	4L	86
	2-22	20-40	25-35	35-50	1.15-1.25	0.06-0.2	0.11-0.13	6.0-8.9	0.5-1.0	.37	.37			
	22-60	20-40	25-35	35-45	1.40-1.50	0.06-0.2	0.11-0.13	6.0-8.9	0.0-0.5	.37	.37			
Bidman, saline------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.15-0.17	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	4-13	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.12-0.14	6.0-8.9	0.5-1.0	.37	.37			
	13-60	25-45	25-35	30-45	1.40-1.50	0.2-0.6	0.13-0.15	6.0-8.9	0.0-0.5	.37	.37			
162:														
Lismas--------------	0-3	15-35	35-45	30-40	1.15-1.25	0.06-0.2	0.18-0.20	6.0-8.9	1.0-3.0	.37	.37	2	4	86
	3-16	10-30	25-35	40-60	1.30-1.40	0.00-0.06	0.14-0.16	9.0-11.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Mittenbutte, cool---	0-4	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	2	3	86
	4-18	55-75	15-30	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	18-60	---	---	---	---	0.2-0.6	---	---	---	---	---			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
162:(cont.)														
Sabatka-------------	0-3	25-45	25-35	30-40	1.15-1.25	0.06-0.2	0.19-0.21	6.0-8.9	1.0-2.0	.37	.37	3	4	86
	3-19	20-50	20-30	35-55	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	19-30	25-45	20-30	30-50	1.40-1.50	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	30-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
164:														
Lismas--------------	0-3	15-35	35-45	30-40	1.15-1.25	0.06-0.2	0.18-0.20	6.0-8.9	1.0-3.0	.37	.37	2	4	86
	3-16	10-30	25-35	40-60	1.30-1.40	0.00-0.06	0.14-0.16	9.0-11.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Sabatka-------------	0-3	25-45	25-35	30-40	1.15-1.25	0.06-0.2	0.19-0.21	6.0-8.9	1.0-2.0	.37	.37	3	6	48
	3-19	20-50	20-30	35-55	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	19-30	25-45	20-30	30-50	1.40-1.50	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	30-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Badland-------------	0-60	---	---	---	---	0.00-0.2	---	---	---	---	---	1	8	0
166:														
Jaywest-------------	0-7	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	7-36	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	36-60	25-45	25-35	25-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
167:														
Jaywest-------------	0-7	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	7-36	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	36-60	25-45	25-35	25-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Moorhead------------	0-5	30-50	30-40	20-27	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	5-35	20-40	25-40	35-45	1.25-1.35	0.2-0.6	0.18-0.20	6.0-8.9	0.5-1.0	.37	.37			
	35-60	25-45	25-40	30-42	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
168:														
Jaywest-------------	0-7	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	7-36	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	36-60	25-45	25-35	25-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Spottedhorse--------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	4-27	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.0-1.0	.37	.37			
	27-35	25-45	25-35	30-45	1.40-1.50	0.2-0.6	0.19-0.21	6.0-8.9	0.0-0.5	.37	.37			
	35-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
170:														
Keeline-------------	0-6	60-85	10-20	2-8	1.35-1.45	6-20	0.06-0.08	0.0-2.9	1.0-2.0	.15	.15	5	2	134
	6-60	55-75	20-30	7-16	1.40-1.50	2-6	0.11-0.13	0.0-2.9	0.0-0.5	.28	.28			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
170:(cont.)														
Tullock-------------	0-4	60-85	10-20	2-6	1.35-1.45	6-20	0.06-0.08	0.0-2.9	1.0-2.0	.15	.15	3	2	134
	4-28	75-90	5-15	2-8	1.45-1.55	6-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15			
	28-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
174:														
Brislawn------------	0-6	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	6-21	25-45	20-30	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	21-31	25-45	25-35	30-45	1.25-1.35	0.2-0.6	0.15-0.17	6.0-8.9	0.5-1.0	.24	.37			
	31-37	25-45	25-35	20-35	1.40-1.50	0.6-2	0.12-0.14	0.0-2.9	0.0-0.5	.15	.37			
	37-60	75-95	5-15	2-15	---	20-20	0.00-0.02	0.0-2.9	0.0-0.0	.02	.02			
Rockybutte----------	0-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	5-23	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	23-38	30-50	30-40	20-35	1.40-1.50	2-6	0.05-0.07	0.0-2.9	0.0-0.5	.05	.32			
	38-60	75-95	2-15	2-15	---	20-20	0.00-0.02	0.0-2.9	0.0-0.0	.02	.02			
Ironbutte-----------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32	2	7	38
	4-12	40-60	30-40	10-25	1.25-1.35	2-6	0.06-0.08	0.0-2.9	0.5-1.0	.10	.37			
	12-60	85-95	5-15	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
176:														
Leiter--------------	0-3	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	3	6	48
	3-22	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	22-33	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	33-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Cromack-------------	0-6	25-45	25-35	30-40	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-3.0	.32	.32	3	4L	86
	6-14	20-40	20-30	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	14-29	25-45	20-30	30-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	29-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
181:														
Moorhead------------	0-4	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	5	6	48
	4-24	20-40	25-35	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-60	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
182:														
Moorhead------------	0-3	30-50	30-40	20-27	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	3-25	20-40	25-40	35-45	1.25-1.35	0.2-0.6	0.18-0.20	6.0-8.9	0.5-1.0	.37	.37			
	25-60	25-45	25-40	30-42	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
183:														
Moorhead	0-4	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	5	6	48
	4-24	20-40	25-35	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-60	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Leiter	0-3	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	3	6	48
	3-22	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	22-33	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	33-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
184:														
Moorhead	0-4	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	5	6	48
	4-24	20-40	25-35	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-60	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Leiter	0-3	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	3	6	48
	3-22	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	22-33	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	33-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
185:														
Moskee	0-9	60-80	10-20	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	2.0-4.0	.24	.24	5	3	86
	9-32	45-65	10-20	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	1.0-2.0	.32	.32			
	32-60	55-75	15-25	10-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
187:														
Nuncho	0-12	30-50	30-40	20-27	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	12-30	20-40	25-35	35-45	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	1.0-2.0	.37	.37			
	30-60	25-45	25-35	28-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
191:														
Pits	---	---	---	---	---	---	---	---	---	---	---	--	---	---
Dumps	---	---	---	---	---	---	---	---	---	---	---	--	---	---
192:														
Platmak	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	4-27	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	1.0-2.0	.37	.37			
	27-60	25-45	25-35	30-40	1.40-1.50	0.2-0.6	0.19-0.21	6.0-8.9	0.0-0.5	.37	.37			
198:														
Recluse	0-5	30-50	35-45	18-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	5-23	25-45	30-40	25-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.37	.37			
	23-60	25-45	35-45	18-30	1.40-1.50	0.6-2	0.16-0.19	0.0-2.9	0.0-0.5	.37	.37			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
203:														
Rockypoint----------	0-3	25-45	40-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	3-60	25-45	35-45	18-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Iwait---------------	0-6	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	6-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
204:														
Samday--------------	0-2	15-35	35-45	30-40	1.20-1.30	0.2-0.6	0.18-0.20	6.0-8.9	1.0-2.0	.32	.32	2	4L	86
	2-16	10-30	30-40	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Samday, cool--------	0-1	15-35	35-45	30-40	1.20-1.30	0.2-0.6	0.18-0.20	6.0-8.9	1.0-2.0	.32	.32	2	4L	86
	1-10	10-30	30-40	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	10-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Shingle-------------	0-3	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.32	.32	2	6	48
	3-16	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
206:														
Samday--------------	0-2	15-35	35-45	30-40	1.20-1.30	0.2-0.6	0.18-0.20	6.0-8.9	0.0-0.5	.32	.32	2	4L	86
	2-16	10-30	30-40	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Shingle-------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	4L	86
	2-12	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	12-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Badland-------------	0-60	---	---	---	---	0.00-0.2	---	---	---	---	---	1	8	0
207:														
Cromack-------------	0-6	25-45	25-35	30-40	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-3.0	.32	.32	3	4L	86
	6-14	20-40	20-30	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	14-29	25-45	20-30	30-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	29-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Fairburn------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	4-15	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	15-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Ucross--------------	0-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	5-31	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	---	---	---	---	0.00-0.2	---	---	---	---	---			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
210:														
Shingle-------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32	2	4L	86
	2-12	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	12-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Taluce--------------	0-2	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28	2	3	86
	2-18	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.32	.32			
	18-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
215:														
Theedle-------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	4L	86
	2-28	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	28-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Kishona-------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	4L	86
	4-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
216:														
Theedle-------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	4L	86
	2-28	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	28-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Kishona-------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	4L	86
	4-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Shingle-------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32	2	4L	86
	2-12	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	12-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
217:														
Theedle-------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	4L	86
	2-28	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	28-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Shingle-------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	4L	86
	2-12	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	12-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
219:														
Torriarents---------	0-4	---	---	20-40	1.25-1.35	0.2-0.6	0.15-0.19	3.0-5.9	0.0-1.0	.37	.37	5	4L	86
	4-60	---	---	20-40	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.0-0.5	.43	.43			
Torriorthents-------	0-5	---	---	20-40	1.25-1.35	0.2-0.6	0.15-0.19	3.0-5.9	0.0-1.0	.37	.37	5	4L	86
	5-60	---	---	20-40	1.40-1.50	0.2-0.6	0.15-0.19	3.0-5.9	0.0-0.5	.43	.43			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
220:														
Pitchdraw-----------	0-4	60-80	10-20	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	4-31	60-80	10-20	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	31-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Ashollow------------	0-5	60-80	10-20	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-60	60-80	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
Niobrara------------	0-3	75-90	5-15	2-8	1.35-1.45	6-20	0.06-0.08	0.0-2.9	0.5-1.0	.20	.20	2	2	134
	3-12	75-92	3-15	2-8	1.45-1.55	6-20	0.04-0.06	0.0-2.9	0.0-0.5	.20	.20			
	12-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
221:														
Turnercrest---------	0-2	60-80	10-20	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	2-32	60-80	10-20	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	32-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Keeline-------------	0-4	60-80	10-20	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	4-60	60-80	10-20	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
Taluce--------------	0-2	55-75	15-35	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	2	3	86
	2-14	55-75	10-30	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	0.0-1.0	.32	.32			
	14-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
223:														
Ucross--------------	0-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	5-31	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
224:														
Ucross--------------	0-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	5-31	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Iwait---------------	0-6	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	6-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
225:														
Ucross--------------	0-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	5-31	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Iwait---------------	0-6	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	6-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
225:(cont.)														
Fairburn------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	4-15	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	15-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
228:														
Ulm-----------------	0-4	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.32	.32	5	6	48
	4-25	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	25-60	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Renohill------------	0-4	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.37	.37	3	6	48
	4-24	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-35	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	35-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
229:														
Ulm-----------------	0-4	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.37	.37	5	6	48
	4-25	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	25-60	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Renohill------------	0-4	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.37	.37	3	6	48
	4-24	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-35	25-45	30-40	28-45	1.30-1.40	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	35-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
233:														
Ustic Torriorthents, gullied------------	0-4	30-50	35-45	15-30	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.32	.32	3	4L	86
	4-35	30-50	35-45	15-30	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32			
	35-60	---	---	---	---	0.00-0.06	---	---	---	---	---			
234:														
Ustic Torriorthents-	0-4	30-50	35-45	15-30	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.32	.32	3	3	86
	4-35	30-50	35-45	15-30	1.25-1.35	0.6-2	0.16-0.18	3.0-5.9	0.0-0.5	.32	.32			
	35-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Badland-------------	0-60	---	---	---	---	0.00-0.2	---	---	---	---	---	1	8	0
236:														
Vonalee-------------	0-3	60-80	15-25	8-15	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-24	60-80	10-20	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	24-60	60-80	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
236:(cont.)														
Terro----------------	0-3	60-80	15-25	8-15	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	3-16	60-80	10-20	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	16-30	60-80	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	30-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
238:														
Vonalf--------------	0-6	60-80	15-25	8-15	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	6-34	60-80	10-20	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	34-60	60-80	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Xema----------------	0-4	60-80	15-25	8-15	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	4-22	60-80	10-20	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	22-31	60-80	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	31-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
239:														
Ironbutte-----------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32	2	7	38
	4-12	40-60	30-40	10-25	1.25-1.35	2-6	0.06-0.08	0.0-2.9	0.5-1.0	.10	.37			
	12-60	85-95	5-15	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
Fairburn------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	4-15	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	15-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Mittenbutte---------	0-3	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	2	3	86
	3-16	55-75	15-30	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	16-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
241:														
Ironbutte-----------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32	2	7	38
	4-12	40-60	30-40	10-25	1.25-1.35	2-6	0.06-0.08	0.0-2.9	0.5-1.0	.10	.37			
	12-60	85-95	5-15	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
Ironbutte, thin solum-------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32	1	7	38
	2-10	40-60	30-40	10-25	1.25-1.35	2-6	0.06-0.08	0.0-2.9	0.5-1.0	.10	.37			
	10-60	85-95	5-15	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
244:														
Muleherder----------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.14-0.16	0.0-2.9	1.0-2.0	.20	.32	3	7	38
	2-16	40-60	30-40	10-25	1.25-1.35	0.6-2	0.12-0.14	0.0-2.9	0.5-1.0	.20	.32			
	16-33	55-75	15-25	8-20	1.45-1.55	6-20	0.05-0.07	0.0-2.9	0.0-0.5	.05	.28			
	33-60	75-95	2-15	2-15	---	20-20	0.00-0.02	0.0-2.9	0.0-0.0	.02	.02			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
244:(cont.)														
Ironbutte-----------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32	2	7	38
	4-12	40-60	30-40	10-25	1.25-1.35	2-6	0.06-0.08	0.0-2.9	0.5-1.0	.10	.37			
	12-60	85-95	5-15	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
248:														
Ziggy---------------	0-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	5-14	25-45	35-45	20-35	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.37	.37			
	14-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Iwait---------------	0-6	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	6-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
249:														
Ziggy---------------	0-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	5-14	25-45	35-45	20-35	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.37	.37			
	14-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Iwait---------------	0-6	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	6-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
250:														
Ziggy---------------	0-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	5-14	25-45	35-45	20-35	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.37	.37			
	14-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Ucross--------------	0-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	5-31	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Oldwolf-------------	0-3	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	3-21	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	21-32	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	32-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
251:														
Water---------------	---	---	---	---	---	---	---	---	---	---	---	--	---	---
252:														
Absted--------------	0-2	55-75	15-30	10-18	1.30-1.40	2-6	0.11-0.14	0.0-3.0	1.0-2.0	.28	.28	2	3	86
	2-8	10-30	30-45	35-50	1.30-1.40	0.06-0.2	0.16-0.18	6.0-9.0	0.5-1.0	.37	.37			
	8-13	10-30	30-45	35-50	1.30-1.40	0.06-0.2	0.11-0.13	6.0-9.0	0.5-1.0	.37	.37			
	13-60	10-30	35-50	30-45	1.30-1.40	0.06-0.2	0.10-0.12	6.0-9.0	0.0-0.5	.37	.37			
Slickspots----------	0-60	5-40	30-50	27-55	1.30-1.40	0.00-0.06	0.09-0.11	6.0-8.9	0.0-1.0	.32	.32	5	4	86

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
253:														
Absted--------------	0-2	55-75	15-30	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	5	3	86
	2-8	10-30	30-45	35-50	1.20-1.30	0.06-0.2	0.12-0.14	6.0-8.9	0.5-1.0	.37	.37			
	8-13	10-30	30-45	35-50	1.20-1.30	0.06-0.2	0.09-0.12	6.0-8.9	0.5-1.0	.37	.37			
	13-60	10-30	40-50	30-45	1.40-1.50	0.2-0.6	0.11-0.13	6.0-8.9	0.0-0.5	.37	.37			
Arvada--------------	0-4	55-75	15-30	10-20	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	5	3	86
	4-14	10-30	30-45	35-50	1.20-1.30	0.06-0.2	0.12-0.14	6.0-8.9	0.5-1.0	.37	.37			
	14-20	10-30	30-45	35-50	1.20-1.30	0.06-0.2	0.11-0.13	6.0-8.9	0.5-1.0	.37	.37			
	20-60	10-30	40-50	30-45	1.40-1.50	0.2-0.6	0.11-0.13	6.0-8.9	0.0-1.0	.37	.37			
Slickspots----------	0-60	5-40	30-50	30-55	1.30-1.40	0.00-0.06	0.09-0.11	6.0-8.9	0.0-1.0	.32	.32	5	4	86
254:														
Badland-------------	0-60	---	---	---	---	0.00-0.2	---	---	---	---	---	1	8	0
Lismas--------------	0-3	15-35	35-45	30-40	1.15-1.25	0.06-0.2	0.18-0.20	6.0-8.9	1.0-3.0	.37	.37	2	4	86
	3-16	10-30	25-35	40-60	1.30-1.40	0.00-0.06	0.14-0.16	9.0-11.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
255:														
Bidman--------------	0-3	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	3-21	20-40	15-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	21-60	25-45	20-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	6.0-8.9	0.0-0.5	.37	.37			
Parmleed------------	0-4	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	4-26	20-40	15-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	26-37	25-45	20-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	6.0-8.9	0.0-0.5	.37	.37			
	37-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
256:														
Bidman--------------	0-4	55-75	15-30	12-20	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.28	.28	3	3	86
	4-14	20-40	25-35	35-45	1.15-1.25	0.2-0.6	0.16-0.19	6.0-8.9	0.5-1.0	.37	.37			
	14-26	20-40	25-35	35-45	1.15-1.25	0.2-0.6	0.16-0.19	6.0-8.9	0.5-1.0	.32	.32			
	26-60	25-45	25-35	24-35	1.25-1.35	0.6-2	0.16-0.19	3.0-5.9	0.0-0.5	.28	.28			
Ulm-----------------	0-3	30-50	35-45	20-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	3-19	20-40	25-35	35-50	1.20-1.30	0.2-0.6	0.17-0.21	6.0-8.9	0.5-1.0	.37	.37			
	19-60	25-45	25-35	30-42	1.20-1.30	0.2-0.6	0.17-0.21	6.0-8.9	0.0-0.5	.37	.37			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
257:														
Bonfri, deep	0-6	60-80	5-25	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	6-19	45-65	10-30	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.28	.28			
	19-34	45-65	15-25	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.28	.28			
	34-58	55-75	15-30	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	58-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Bonfri	0-4	60-80	10-30	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	3	3	86
	4-19	45-65	10-25	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.28	.28			
	19-29	55-75	15-30	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	29-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
258:														
Bonfri	0-4	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	4-22	25-45	25-45	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	22-32	25-45	30-50	20-30	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	32-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Kirby	0-4	25-50	30-50	15-25	1.15-1.25	2-6	0.14-0.16	0.0-2.9	1.0-3.0	.20	.32	2	8	0
	4-17	40-60	30-40	10-25	1.25-1.35	2-6	0.08-0.10	0.0-2.9	0.0-1.0	.10	.32			
	17-60	85-95	5-15	0-2	---	20-20	0.00-0.02	0.0-0.0	0.0-0.5	.02	.02			
259:														
Bonfri	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	3	3	86
	1-5	60-80	10-30	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24			
	5-20	45-65	10-25	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.28	.28			
	20-30	55-75	15-30	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	30-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Twilight	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	3	3	86
	1-5	60-80	5-25	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24			
	5-20	60-80	5-25	10-18	1.35-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	20-29	60-80	5-25	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	29-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Blacksheep	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	3	86
	1-4	55-75	10-30	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24			
	4-16	55-75	10-30	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	16-60	---	---	---	---	0.2-0.6	---	---	---	---	---			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
260:														
Cabbart, wooded-----	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	4L	86
	1-4	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32			
	4-16	25-45	30-50	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Volborg, wooded-----	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	4	86
	1-3	15-35	30-50	30-40	1.15-1.25	0.06-0.2	0.19-0.21	6.0-8.9	0.5-2.0	.37	.37			
	3-16	10-30	30-50	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Badland-------------	0-60	---	---	---	---	0.00-0.2	---	---	---	---	---	1	8	0
261:														
Cabbart-------------	0-3	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	3-15	25-45	30-50	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	15-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Yawdim--------------	0-3	15-35	30-50	30-40	1.15-1.25	0.2-0.6	0.18-0.20	6.0-8.9	1.0-2.0	.32	.32	2	4L	86
	3-16	10-30	30-50	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Badland-------------	0-60	---	---	---	---	0.00-0.2	---	---	---	---	---	1	8	0
262:														
Cambria-------------	0-2	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	2-8	25-45	25-45	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	8-60	25-45	30-50	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Kishona-------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	4L	86
	4-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Zigweid-------------	0-4	30-50	30-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	4-17	25-45	25-45	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	17-60	25-45	30-45	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
263:														
Cedar Butte---------	0-7	55-75	15-25	10-18	1.20-1.30	2-6	0.14-0.16	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	7-15	10-30	35-45	35-50	1.20-1.30	0.06-0.2	0.15-0.17	6.0-8.9	0.5-1.0	.37	.37			
	15-26	10-20	35-45	35-50	1.20-1.30	0.06-0.2	0.11-0.13	6.0-8.9	0.5-1.0	.37	.37			
	26-60	10-30	40-50	30-45	1.40-1.50	0.2-0.6	0.11-0.13	6.0-8.9	0.0-0.5	.37	.37			
Slickspots----------	0-60	5-40	30-50	30-55	1.30-1.40	0.00-0.06	0.09-0.11	6.0-8.9	0.0-1.0	.32	.32	5	4	86

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
264:														
Clarkelen-----------	0-5	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	5-60	55-75	15-25	8-18	1.50-1.60	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
Draknab-------------	0-5	60-80	10-20	8-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	5-60	75-95	0-15	2-12	1.50-1.60	6-20	0.06-0.10	0.0-2.9	0.0-0.5	.17	.17			
265:														
Clarkelen-----------	0-5	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	5-60	55-75	15-25	8-18	1.50-1.60	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
Draknab-------------	0-5	60-80	10-20	8-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	5-60	75-95	0-15	2-12	1.50-1.60	6-20	0.06-0.10	0.0-2.9	0.0-0.5	.17	.17			
Boruff--------------	0-2	0-10	45-55	40-60	1.05-1.15	0.06-0.2	0.15-0.17	6.0-8.9	1.0-3.0	.32	.32	5	4	86
	2-60	0-10	45-55	35-55	1.30-1.40	0.06-0.2	0.15-0.17	6.0-8.9	0.0-0.5	.32	.32			
266:														
Coaliams, moderately saline-------------	0-4	25-45	40-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	2.0-4.0	.32	.32	5	5	86
	4-22	25-45	30-40	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	1.0-3.0	.37	.37			
	22-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.12-0.14	0.0-2.9	0.0-0.5	.37	.37			
267:														
Cromack-------------	0-6	25-45	25-35	30-40	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-3.0	.32	.32	3	4L	86
	6-14	20-40	20-30	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	14-29	25-45	20-30	30-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	29-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Samsil--------------	0-4	25-45	20-40	30-40	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0	.32	.32	2	4L	86
	4-16	25-45	15-35	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
268:														
Decolney------------	0-3	60-80	10-20	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-22	45-65	10-20	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	22-60	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Hiland--------------	0-3	60-80	10-20	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-30	45-65	10-20	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	30-60	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
269:														
Decolney	0-3	60-80	10-20	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-22	45-65	10-20	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	22-60	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Hiland	0-3	60-80	10-20	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-30	45-65	10-20	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	30-60	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
270:														
Deekay	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-24	25-50	25-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Deekay, stratified substratum	0-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	5-25	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.0-1.0	.37	.37			
	25-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
271:														
Delpoint	0-4	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	4-17	25-45	25-45	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	17-33	25-45	25-45	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	33-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Cabbart	0-3	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	3-15	25-45	30-50	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	15-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
272:														
Delpoint	0-4	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	4-17	25-45	25-45	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	17-33	25-45	25-45	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	33-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Yamacall	0-3	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	3-15	25-45	30-50	20-35	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.37	.37			
	15-60	25-45	30-50	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Cabbart	0-3	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	3-15	25-45	30-50	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	15-60	---	---	---	---	0.00-0.2	---	---	---	---	---			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
273:														
Delpoint, wooded----	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	3	4L	86
	1-5	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32			
	5-18	25-45	25-45	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	18-34	25-45	25-45	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	34-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Yamacall, wooded----	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	5	4L	86
	1-4	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32			
	4-16	20-50	30-50	20-35	1.25-1.35	0.6-2	0.16-0.20	0.0-2.9	0.5-1.0	.37	.37			
	16-60	25-45	30-50	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Cabbart, wooded-----	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	4L	86
	1-4	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32			
	4-16	25-45	30-50	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
274:														
Denied access-------	---	---	---	---	---	---	---	---	---	---	---	--	---	---
275:														
Echeta--------------	0-3	25-45	25-35	30-40	1.15-1.25	0.2-0.6	0.19-0.21	6.0-8.9	1.0-3.0	.32	.32	5	4L	86
	3-15	20-40	20-30	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	15-60	25-45	20-30	30-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
Moorhead------------	0-4	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	5	6	48
	4-24	20-40	25-35	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-60	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
276:														
Elwop, wooded-------	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	3	3	86
	1-5	60-80	10-20	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24			
	5-25	45-65	10-20	20-35	1.30-1.40	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	25-35	55-75	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	35-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Mittenbutte, wooded-	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	3	86
	1-4	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28			
	4-16	55-75	15-30	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	16-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Rock outcrop--------	0-60	---	---	---	---	0.00-0.06	---	---	---	---	---	--	---	---

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
277:														
Fairburn------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	4-15	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	15-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Mittenbutte---------	0-3	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	2	3	86
	3-16	55-75	15-30	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	16-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Badland-------------	0-60	---	---	---	---	0.00-0.2	---	---	---	---	---	1	8	0
278:														
Fairburn------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	4-15	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	15-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Samsil--------------	0-4	25-45	20-40	30-40	1.15-1.25	0.2-0.6	0.19-0.21	6.0-8.9	1.0-2.0	.32	.32	2	4L	86
	4-16	25-45	15-35	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Badland-------------	0-60	---	---	---	---	0.00-0.2	---	---	---	---	---	1	8	0
279:														
Fairburn, wooded----	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	4L	86
	1-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32			
	5-16	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Samsil, wooded------	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	4L	86
	1-5	25-45	20-40	30-40	1.15-1.25	0.2-0.6	0.19-0.21	6.0-8.9	1.0-2.0	.32	.32			
	5-16	25-45	15-35	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Badland-------------	0-60	---	---	---	---	0.00-0.2	---	---	---	---	---	1	8	0
280:														
Felix---------------	0-5	0-10	20-30	55-75	1.15-1.25	0.00-0.06	0.13-0.15	9.0-11.9	1.0-3.0	.32	.32	5	4	86
	5-30	0-10	15-30	60-80	1.15-1.25	0.00-0.06	0.13-0.15	9.0-11.9	0.5-1.0	.37	.37			
	30-50	0-10	25-35	60-75	1.20-1.30	0.00-0.06	0.13-0.15	9.0-11.9	0.0-0.5	.37	.37			
	50-60	0-10	30-40	50-70	1.20-1.30	0.00-0.06	0.14-0.16	9.0-11.9	0.0-0.5	.37	.37			
281:														
Foreleft------------	0-4	30-50	30-50	15-25	1.15-1.35	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-26	25-45	25-45	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	26-60	25-45	35-50	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
282:														
Foreleft------------	0-4	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-26	25-45	25-45	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	26-60	25-45	35-50	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Bonfri--------------	0-4	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	4-22	25-45	25-45	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	22-32	25-45	30-50	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	32-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
283:														
Gateson, wooded-----	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	3	3	86
	1-4	60-80	10-20	10-18	1.15-1.25	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24			
	4-13	60-80	5-15	10-25	1.20-1.30	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	13-21	40-60	15-25	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.0-0.5	.32	.32			
	21-37	55-75	10-25	10-25	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	37-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Xema, wooded--------	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	3	3	86
	1-4	60-80	15-25	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24			
	4-17	60-80	10-20	10-20	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	17-38	60-80	10-20	8-20	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	38-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Mittenbutte, wooded-	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	3	86
	1-4	55-75	15-25	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24			
	4-13	55-75	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	13-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
284:														
Haverdad------------	0-5	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.32	.32	5	4L	86
	5-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
285:														
Haverdad------------	0-4	25-45	35-55	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	4L	86
	4-60	25-45	30-50	18-35	1.25-1.35	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Boruff--------------	0-2	0-10	45-55	40-60	1.05-1.15	0.06-0.2	0.14-0.16	6.0-8.9	1.0-3.0	.37	.37	5	4	86
	2-60	0-10	45-55	35-55	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
286:														
Havre---------------	0-6	25-45	35-55	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	6-60	25-45	30-50	15-35	1.40-1.50	0.6-2	0.15-0.17	0.0-2.9	0.0-0.5	.37	.37			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
286:(cont.)														
Bigsandy------------	0-3	25-45	35-55	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	3-10	25-45	30-50	15-35	1.20-1.30	0.6-2	0.16-0.18	3.0-5.9	0.5-1.0	.37	.37			
	10-60	25-45	30-50	18-35	1.40-1.50	0.6-2	0.15-0.17	3.0-5.9	0.0-0.5	.37	.37			
287:														
Hiland--------------	0-4	60-80	10-20	8-18	1.25-1.35	2-6	0.10-0.13	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	4-30	45-65	10-20	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	30-60	55-75	15-25	10-20	1.35-1.45	2-6	0.10-0.14	0.0-2.9	0.0-0.5	.24	.24			
Bowbac--------------	0-4	60-80	10-20	10-20	1.35-1.45	2-6	0.10-0.15	0.0-2.9	1.0-2.0	.28	.28	3	3	86
	4-15	45-65	10-20	20-35	1.35-1.45	0.6-2	0.14-0.18	3.0-5.9	0.5-1.0	.28	.28			
	15-24	55-75	15-25	10-20	1.40-1.50	2-6	0.12-0.15	0.0-2.9	0.0-0.5	.28	.28			
	24-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
288:														
Hiland--------------	0-3	60-80	10-20	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-30	45-65	10-20	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	30-60	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Bowbac--------------	0-3	60-80	10-20	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	3-31	45-65	10-20	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	31-39	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	39-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
289:														
Hiland--------------	0-3	60-80	10-20	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-30	45-65	10-20	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	30-60	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Bowbac--------------	0-3	60-80	10-20	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	3-31	45-65	10-20	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	31-39	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	39-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
290:														
Hiland--------------	0-2	60-80	10-20	8-18	1.25-1.35	2-6	0.10-0.13	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	2-27	45-65	10-20	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.32	.32			
	27-60	55-75	15-25	10-20	1.35-1.45	2-6	0.10-0.14	0.0-2.9	0.0-0.5	.24	.24			
Decolney------------	0-2	70-90	10-20	3-8	1.35-1.45	6-20	0.06-0.08	0.0-2.9	1.0-2.0	.20	.20	5	2	134
	2-11	45-65	10-20	20-35	1.25-1.35	0.6-2	0.14-0.16	3.0-5.9	0.5-1.0	.28	.28			
	11-60	55-75	15-25	10-22	1.35-1.45	2-6	0.11-0.14	0.0-2.9	0.0-0.5	.28	.28			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
291:														
Ironbutte, wooded---	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	7	38
	1-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32			
	5-13	40-60	30-40	10-25	1.25-1.35	2-6	0.06-0.08	0.0-2.9	0.5-1.0	.10	.37			
	13-60	85-95	5-15	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
Fairburn, wooded----	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	4L	86
	1-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32			
	5-16	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Mittenbutte, wooded-	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	3	86
	1-4	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28			
	4-16	55-75	15-30	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	16-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
292:														
Jaywest-------------	0-7	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	7-36	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	36-60	25-45	25-35	25-40	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Jaywest, stratified substratum---------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	4-23	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.0-1.0	.37	.37			
	23-60	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
293:														
Jaywest, saline substratum---------	0-7	55-75	15-25	10-18	1.20-1.30	2-6	0.14-0.16	0.0-2.9	1.0-3.0	.32	.32	5	3	86
	7-15	20-40	20-30	35-50	1.20-1.30	0.06-0.2	0.12-0.14	6.0-8.9	0.5-1.0	.37	.37			
	15-30	20-40	20-35	35-50	1.20-1.30	0.06-0.2	0.11-0.13	6.0-8.9	0.5-1.0	.37	.37			
	30-60	25-45	25-35	25-40	1.40-1.50	0.2-0.6	0.14-0.16	3.0-5.9	0.0-0.5	.37	.37			
Cedar Butte---------	0-7	55-75	15-25	10-20	1.20-1.30	2-6	0.14-0.16	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	7-15	10-30	35-45	35-50	1.20-1.30	0.06-0.2	0.16-0.18	6.0-8.9	0.5-1.0	.37	.37			
	15-26	10-30	35-45	35-50	1.20-1.30	0.06-0.2	0.10-0.12	6.0-8.9	0.5-1.0	.37	.37			
	26-60	10-30	40-50	30-45	1.40-1.50	0.2-0.6	0.09-0.11	6.0-8.9	0.0-0.5	.37	.37			
Slickspots----------	0-60	5-40	30-50	30-55	1.30-1.40	0.00-0.06	0.09-0.11	6.0-8.9	0.0-1.0	.32	.32	5	4	86

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
294:														
Kirby, wooded-------	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	8	0
	1-5	25-50	30-50	15-25	1.15-1.25	2-6	0.14-0.16	0.0-2.9	1.0-3.0	.20	.32			
	5-18	40-60	30-40	10-25	1.25-1.35	2-6	0.08-0.10	0.0-2.9	0.0-1.0	.10	.32			
	18-60	85-95	5-15	0-2	---	20-20	0.00-0.02	0.0-0.0	0.0-0.5	.02	.02			
Cabbart, wooded-----	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	4L	86
	1-4	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32			
	4-16	25-45	30-50	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Blacksheep, wooded--	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	3	86
	1-4	55-75	10-30	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24			
	4-16	55-75	10-30	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	16-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
295:														
Lismas--------------	0-3	15-35	35-45	30-40	1.15-1.25	0.2-0.6	0.18-0.20	6.0-8.9	1.0-3.0	.37	.37	2	4	86
	3-16	10-30	25-35	40-60	1.30-1.40	0.00-0.06	0.14-0.16	9.0-11.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Sabatka-------------	0-3	25-45	25-35	30-40	1.15-1.25	0.2-0.6	0.19-0.21	6.0-8.9	1.0-2.0	.37	.37	3	4	86
	3-19	20-50	20-30	35-55	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	19-30	25-45	20-30	30-50	1.40-1.50	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	30-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Xema----------------	0-4	60-80	15-25	10-18	1.20-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	3	3	86
	4-18	60-80	10-20	10-18	1.35-1.45	2-6	0.13-0.15	0.0-2.9	0.0-1.0	.28	.28			
	18-33	60-80	15-25	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	33-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
296:														
Megonot-------------	0-4	25-45	20-40	30-40	1.15-1.25	0.2-0.6	0.18-0.20	3.0-5.9	1.0-3.0	.32	.32	3	4L	86
	4-15	20-40	20-40	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	15-33	25-45	15-35	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	33-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Yawdim--------------	0-3	15-35	30-50	30-40	1.15-1.25	0.2-0.6	0.18-0.20	6.0-8.9	1.0-2.0	.32	.32	2	4L	86
	3-16	10-30	30-50	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
297:														
Muleherder, wooded--	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	3	8	0
	1-3	30-50	35-45	15-25	1.15-1.25	0.6-2	0.14-0.16	0.0-2.9	1.0-2.0	.20	.32			
	3-17	40-60	30-40	10-25	1.25-1.35	0.6-2	0.12-0.14	0.0-2.9	0.5-1.0	.20	.32			
	17-34	55-75	15-25	8-20	1.45-1.55	6-20	0.05-0.07	0.0-2.9	0.0-0.5	.05	.28			
	34-60	75-95	2-15	2-15	---	20-20	0.00-0.02	0.0-2.9	0.0-0.0	.02	.02			
Ironbutte, wooded---	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	8	0
	1-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32			
	5-13	40-60	30-40	10-25	1.25-1.35	2-6	0.06-0.08	0.0-2.9	0.5-1.0	.10	.37			
	13-60	85-95	5-15	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
298:														
Nuncho--------------	0-5	25-45	25-45	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	2.0-4.0	.32	.32	5	6	48
	5-25	20-40	20-40	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	1.0-2.0	.37	.37			
	25-60	25-45	20-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	6.0-8.9	0.0-0.5	.37	.37			
299:														
Oldwolf-------------	0-3	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	3-21	25-45	30-40	20-35	1.25-1.35	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	21-32	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	32-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Fairburn------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	4-15	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	15-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
300:														
Oshoto--------------	0-7	20-35	50-55	15-25	1.05-1.15	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	7-32	15-47	40-55	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	32-60	15-30	45-55	20-35	1.30-1.40	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.37	.37			
Klinedraw-----------	0-4	20-35	50-55	15-25	1.05-1.15	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	4-24	15-35	40-55	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-32	15-35	40-55	20-35	1.30-1.40	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.37	.37			
	32-60	---	---	---	---	0.00-0.06	---	---	---	---	---			
301:														
Oshoto--------------	0-7	20-35	40-60	15-25	1.05-1.15	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	7-32	15-45	40-55	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	32-60	15-45	45-55	20-35	1.30-1.40	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.37	.37			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
301:(cont.)														
Klinedraw-----------	0-4	20-35	50-55	15-25	1.05-1.15	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	4-24	15-47	40-55	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	24-32	15-45	40-55	20-35	1.30-1.40	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.37	.37			
	32-60	---	---	---	---	0.00-0.06	---	---	---	---	---			
302:														
Oshoto--------------	0-7	20-35	50-55	15-25	1.05-1.15	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	7-32	15-45	40-55	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	32-60	15-30	45-55	20-35	1.30-1.40	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.37	.37			
Moorhead------------	0-3	10-20	40-55	28-35	1.05-1.15	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	5	6	48
	3-24	10-20	40-50	35-50	1.15-1.25	0.06-0.2	0.15-0.17	6.0-8.9	0.5-1.0	.37	.37			
	24-60	10-25	35-55	30-45	1.30-1.40	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
303:														
Oshoto--------------	0-7	20-30	50-60	15-25	1.05-1.15	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	7-32	15-25	45-55	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	32-60	15-30	45-60	20-35	1.30-1.40	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.37	.37			
Ziggy---------------	0-4	25-35	50-60	15-25	1.05-1.15	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	4-17	20-47	40-55	20-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	17-60	20-30	45-55	20-35	1.30-1.40	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.37	.37			
304:														
Parmleed------------	0-4	55-75	15-30	10-20	1.25-1.35	2-6	0.12-0.14	0.0-2.9	1.0-2.0	.32	.32	3	3	86
	4-17	20-40	25-35	35-50	1.10-1.30	0.06-0.2	0.16-0.19	6.0-8.9	0.5-1.0	.43	.43			
	17-30	25-45	25-35	28-40	1.20-1.40	0.2-0.6	0.19-0.21	6.0-8.9	0.0-0.5	.43	.43			
	30-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Bidman--------------	0-2	55-75	15-25	12-20	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.28	.28	3	3	86
	2-17	20-40	25-35	35-45	1.15-1.25	0.06-0.2	0.16-0.19	6.0-8.9	0.5-1.0	.37	.37			
	17-25	20-40	25-35	35-45	1.15-1.25	0.2-0.6	0.16-0.19	6.0-8.9	0.5-1.0	.32	.32			
	25-60	25-45	25-35	24-35	1.25-1.35	0.6-2	0.16-0.19	3.0-5.9	0.0-0.5	.28	.28			
305:														
Pinehill------------	0-3	25-45	25-45	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	3-31	20-40	15-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	31-60	25-45	25-45	28-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
306:														
Pinehill	0-3	25-45	25-45	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	3-31	20-40	15-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	31-60	25-45	25-45	28-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Pylon	0-3	25-45	25-45	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	3	6	48
	3-21	20-40	15-35	35-55	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	21-30	25-45	25-45	28-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	30-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
307:														
Pinehill, loam	0-6	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	6-24	20-40	15-35	35-55	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-60	25-45	20-40	28-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Pinehill, clay loam	0-3	25-45	25-45	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	3-31	20-40	15-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	31-60	25-45	25-45	28-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
308:														
Pinehill	0-6	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	6-24	20-40	15-35	35-55	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	24-60	25-45	20-40	28-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Pylon	0-5	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	5-21	20-40	15-35	35-55	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	21-34	25-45	20-40	28-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	34-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
309:														
Pitchdraw	0-4	60-80	10-20	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	4-31	60-80	10-20	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	31-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Ashollow	0-5	60-80	10-20	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	5-60	60-80	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
Mittenbutte	0-3	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	2	3	86
	3-16	55-75	15-30	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	16-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
310:														
Rockypoint	0-3	25-45	40-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	3-60	25-45	35-45	18-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
311:														
Rockypoint----------	0-3	25-45	40-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	3-60	25-45	35-45	18-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Boruff--------------	0-2	0-10	45-55	40-60	1.05-1.15	0.06-0.2	0.14-0.16	6.0-8.9	1.0-3.0	.37	.37	5	4	86
	2-60	0-10	45-55	35-55	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
312:														
Rockypoint----------	0-3	25-45	40-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	3-60	25-45	35-45	18-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
Sodawells-----------	0-5	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	5-60	55-75	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
313:														
Savageton-----------	0-6	25-45	20-40	30-40	1.15-1.25	0.2-0.6	0.19-0.21	6.0-8.9	1.0-2.0	.32	.32	3	4L	86
	6-20	20-40	15-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	20-29	25-45	15-35	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	29-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Samday--------------	0-2	25-45	20-40	30-40	1.15-1.25	0.2-0.6	0.19-0.21	6.0-8.9	1.0-2.0	.32	.32	2	4L	86
	2-16	25-45	15-35	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
314:														
Savageton-----------	0-6	25-45	20-40	30-40	1.15-1.25	0.2-0.6	0.19-0.21	6.0-8.9	1.0-2.0	.32	.32	3	4L	86
	6-20	20-40	15-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	20-29	25-45	15-35	35-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	29-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Silhouette----------	0-2	25-45	30-40	30-40	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0	.32	.32	5	4	86
	2-28	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	28-60	25-45	25-40	30-45	1.30-1.40	0.2-0.6	0.19-0.21	6.0-8.9	0.0-0.5	.37	.37			
315:														
Shingle-------------	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32	2	5	56
	2-12	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	12-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Taluce--------------	0-2	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.24	.24	2	3	86
	2-18	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	18-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Badland-------------	0-60	---	---	---	---	0.00-0.2	---	---	---	---	---	1	8	0

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
316:														
Shingle, wooded-----	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	4L	86
	1-3	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32			
	3-13	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32			
	13-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Taluce, wooded------	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	3	86
	1-3	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	3-19	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.32	.32			
	19-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Badland-------------	0-60	---	---	---	---	0.00-0.2	---	---	---	---	---	1	8	0
317:														
Silhouette----------	0-2	25-45	25-45	30-40	1.15-1.25	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0	.32	.32	5	4	86
	2-28	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	28-60	25-45	25-40	30-50	1.30-1.40	0.2-0.6	0.19-0.21	6.0-8.9	0.0-0.5	.37	.37			
Ulm-----------------	0-4	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.32	.32	5	4L	86
	4-25	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	25-60	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
318:														
Sodawells-----------	0-5	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	5-60	55-75	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
Pathfinder----------	0-5	60-80	10-20	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	5-60	75-95	5-15	2-12	1.50-1.60	6-20	0.08-0.10	0.0-2.9	0.0-0.5	.17	.17			
Boruff--------------	0-2	0-10	45-55	40-60	1.05-1.15	0.06-0.2	0.14-0.16	6.0-8.9	1.0-3.0	.37	.37	5	4	86
	2-60	0-10	45-55	35-55	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
319:														
Spottedhorse--------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	4-27	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.0-1.0	.37	.37			
	27-35	25-45	25-35	30-45	1.40-1.50	0.2-0.6	0.19-0.21	6.0-8.9	0.0-0.5	.37	.37			
	35-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Leiter--------------	0-3	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.37	.37	3	6	48
	3-22	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	22-33	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	33-60	---	---	---	---	0.00-0.2	---	---	---	---	---			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
320:														
Stetter-------------	0-3	0-15	40-50	40-60	1.05-1.15	0.06-0.2	0.14-0.16	6.0-8.9	1.0-3.0	.37	.37	5	4	86
	3-60	5-20	30-40	40-60	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
321:														
Swanboy-------------	0-4	10-20	35-45	35-50	1.05-1.15	0.00-0.06	0.14-0.16	6.0-8.9	1.0-3.0	.37	.37	5	4	86
	4-45	0-10	30-40	60-70	1.15-1.25	0.00-0.06	0.11-0.13	9.0-12.0	0.5-1.0	.37	.37			
	45-60	0-10	30-40	55-70	1.30-1.40	0.00-0.06	0.08-0.10	9.0-12.0	0.0-0.5	.37	.37			
Cedar Butte---------	0-2	10-20	60-80	10-20	1.05-1.15	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	2-14	10-20	40-55	30-50	1.15-1.25	0.06-0.2	0.18-0.20	6.0-8.9	0.5-1.0	.37	.37			
	14-35	10-20	40-55	30-50	1.15-1.25	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
	35-60	0-10	35-55	30-50	1.30-1.40	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.37	.37			
Slickspots----------	0-60	5-40	30-50	30-55	1.30-1.40	0.00-0.06	0.09-0.11	6.0-8.9	0.0-1.0	.32	.32	5	4	86
322:														
Toby----------------	0-7	60-80	5-25	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	7-33	60-80	5-25	10-18	1.35-1.45	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	33-60	60-80	5-25	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
Twilight------------	0-5	60-80	5-25	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	3	3	86
	5-20	60-80	5-25	10-18	1.35-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	20-29	60-80	5-25	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	29-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Blacksheep----------	0-3	55-75	10-30	10-18	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	2	3	86
	3-15	55-75	10-30	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	15-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
323:														
Ucross--------------	0-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	5-31	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Fairburn------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	4-15	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	15-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
324:														
Ucross--------------	0-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	5-31	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	---	---	---	---	0.00-0.2	---	---	---	---	---			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
324:(cont.)														
Fairburn------------	0-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	4-15	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	15-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
325:														
Ucross, wooded------	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	3	4L	86
	1-6	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32			
	6-32	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	32-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Fairburn, wooded----	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	4L	86
	1-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32			
	5-15	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	15-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
326:														
Ucross, wooded------	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	3	4L	86
	1-6	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32			
	6-32	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
	32-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Iwait, wooded-------	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	5	4L	86
	1-7	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32			
	7-60	25-45	30-40	20-35	1.40-1.50	0.6-2	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Fairburn, wooded----	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	4L	86
	1-5	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-3.0	.32	.32			
	5-16	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	16-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
327:														
Ulm-----------------	0-4	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.32	.32	5	6	48
	4-25	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	25-60	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
Bidman--------------	0-3	30-50	30-50	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	3-21	20-40	15-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	21-60	25-45	20-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	6.0-8.9	0.0-0.5	.37	.37			
328:														
Ulm-----------------	0-4	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.32	.32	5	6	48
	4-25	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	25-60	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
329:														
Ulm	0-9	25-45	30-40	28-35	1.15-1.25	0.6-2	0.17-0.21	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	9-22	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.17-0.21	6.0-8.9	0.5-1.0	.37	.37			
	22-60	25-45	30-40	30-42	1.20-1.30	0.2-0.6	0.17-0.21	6.0-8.9	0.0-0.5	.37	.37			
330:														
Ulm	0-4	25-45	30-40	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-2.0	.32	.32	5	6	48
	4-25	20-40	25-35	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	25-60	25-45	30-40	30-45	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
331:														
Valent	0-3	75-90	0-20	5-15	1.30-1.40	6-20	0.06-0.08	0.0-2.9	0.0-1.0	.15	.15	5	2	134
	3-60	75-95	2-15	2-12	1.50-1.60	6-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15			
Duneland	0-60	75-95	2-15	2-12	1.50-1.60	6-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15	5	2	134
332:														
Vanstel	0-4	20-30	50-60	15-25	1.10-1.20	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	4-19	15-25	45-55	28-35	1.20-1.30	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
	19-60	15-30	45-60	20-35	1.30-1.40	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.37	.37			
Pinehill	0-4	10-20	40-55	28-35	1.15-1.25	0.6-2	0.19-0.21	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	4-23	10-20	40-50	35-50	1.20-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.37	.37			
	23-60	10-25	35-55	30-45	1.30-1.40	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.37	.37			
333:														
Vonalee	0-3	60-80	15-25	8-15	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	3-24	60-80	10-20	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	24-60	60-80	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
Terro	0-3	60-80	15-25	8-15	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	3-16	60-80	10-20	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	16-30	60-80	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	30-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Taluce	0-2	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.24	.24	2	3	86
	2-18	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	18-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
334:														
Vonalf	0-6	60-80	15-25	8-15	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	6-34	60-80	10-20	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	34-60	60-80	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
334:(cont.)														
Xema	0-4	60-80	15-25	8-15	1.20-1.30	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	4-22	60-80	10-20	10-18	1.30-1.40	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	22-31	60-80	15-25	8-18	1.40-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	31-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
Mittenbutte	0-3	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	2	3	86
	3-16	55-75	15-30	8-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.24	.24			
	16-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
335:														
Wibaux	0-3	30-50	35-45	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32	2	7	38
	3-14	40-50	35-45	10-20	1.25-1.35	2-6	0.07-0.09	0.0-2.9	0.0-1.0	.10	.37			
	14-60	85-95	5-15	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
Shingle	0-2	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	2	4L	86
	2-12	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32			
	12-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Taluce	0-2	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.24	.24	2	3	86
	2-18	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.28	.28			
	18-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
336:														
Wibaux, wooded	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	8	0
	1-4	30-50	35-45	15-25	1.15-1.25	0.6-2	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32			
	4-15	40-50	35-45	10-20	1.25-1.35	2-6	0.07-0.09	0.0-2.9	0.0-1.0	.10	.37			
	15-60	85-95	5-15	0-2	---	20-20	0.00-0.02	0.0-2.9	0.0-0.5	.02	.02			
Shingle, wooded	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	4L	86
	1-3	30-50	35-45	15-25	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32			
	3-13	25-45	35-45	20-35	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32			
	13-60	---	---	---	---	0.00-0.2	---	---	---	---	---			
Taluce, wooded	0-1	0-5	0-0	0-5	---	6-20	---	---	100-100	---	---	2	3	86
	1-3	55-75	15-25	10-18	1.25-1.35	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28			
	3-19	55-75	15-25	10-18	1.45-1.55	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.32	.32			
	19-60	---	---	---	---	0.2-0.6	---	---	---	---	---			
337:														
Winler	0-4	0-7	30-40	55-70	1.05-1.15	0.00-0.06	0.13-0.15	9.0-12.0	1.0-3.0	.28	.28	3	4	86
	4-12	0-5	30-40	60-75	1.15-1.25	0.00-0.06	0.13-0.15	9.0-12.0	0.0-1.0	.28	.28			
	12-24	0-5	30-40	60-75	1.15-1.25	0.00-0.06	0.13-0.15	9.0-12.0	0.0-1.0	.28	.28			
	24-32	0-5	30-40	60-75	1.30-1.40	0.00-0.06	0.13-0.15	9.0-12.0	0.0-0.5	.28	.28			
	32-60	---	---	---	---	0.00-0.06	---	---	---	---	---			

Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
337:(cont.)														
Twotop	0-3	0-7	30-40	55-70	1.05-1.15	0.00-0.06	0.13-0.15	9.0-12.0	1.0-3.0	.28	.28	5	4	86
	3-14	0-5	30-40	60-75	1.15-1.25	0.00-0.06	0.13-0.15	9.0-12.0	0.5-1.0	.28	.28			
	14-27	0-5	30-40	60-75	1.15-1.25	0.00-0.06	0.13-0.15	9.0-12.0	0.5-1.0	.28	.28			
	27-60	0-5	30-40	60-75	1.30-1.40	0.00-0.06	0.13-0.15	9.0-12.0	0.0-0.5	.28	.28			
338:														
Zigweid	0-4	30-50	35-45	18-27	1.15-1.25	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	5	4L	86
	4-13	25-45	35-45	20-35	1.20-1.30	0.6-2	0.16-0.21	3.0-5.9	0.5-1.0	.37	.37			
	13-60	25-45	30-40	20-35	1.25-1.35	0.6-2	0.16-0.21	3.0-5.9	0.0-0.5	.37	.37			
Cambria	0-3	30-50	35-45	15-25	1.10-1.20	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.37	.37	5	5	56
	3-11	15-30	40-55	28-35	1.20-1.30	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.43	.43			
	11-60	18-45	35-45	20-30	1.20-1.30	0.6-2	0.17-0.20	3.0-5.9	0.0-0.5	.43	.43			
339:														
Zigweid	0-1	55-70	15-25	10-20	1.25-1.35	2-6	0.12-0.14	0.0-2.9	1.0-2.0	.28	.28	5	3	86
	1-11	25-45	35-45	20-35	1.20-1.30	0.6-2	0.16-0.21	3.0-5.9	0.5-1.0	.37	.37			
	11-60	25-45	35-45	20-35	1.25-1.35	0.6-2	0.16-0.21	3.0-5.9	0.0-0.5	.37	.37			
Kishona	0-5	30-50	35-45	20-27	1.20-1.30	0.6-2	0.15-0.17	0.0-2.9	1.0-2.0	.32	.32	5	4L	86
	5-60	18-45	35-45	20-35	1.20-1.35	0.6-2	0.16-0.20	3.0-5.9	0.0-0.5	.37	.37			
Cambria	0-2	30-50	35-45	15-25	1.10-1.20	0.6-2	0.16-0.18	0.0-2.9	1.0-2.0	.37	.37	5	5	56
	2-6	18-40	30-40	28-35	1.20-1.30	0.6-2	0.19-0.21	3.0-5.9	0.5-1.0	.43	.43			
	6-60	18-40	35-45	20-30	1.20-1.30	0.6-2	0.17-0.20	3.0-5.9	0.0-0.5	.43	.43			

Chemical Soil Properties

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
103:								
Arwite	0-5	7.0-16	---	6.6-7.8	0	0	0	0
	5-32	11-19	---	6.6-8.4	0	0	0	0
	32-60	4.0-10	---	7.4-8.4	1-5	0	0.0-2.0	0
105:								
Arwite	0-5	7.0-16	---	6.6-7.8	0	0	0	0
	5-32	11-19	---	6.6-8.4	0	0	0	0
	32-60	4.0-10	---	7.4-8.4	1-5	0	0.0-2.0	0
Elwop	0-4	7.0-16	---	6.6-7.3	0	0	0	0
	4-24	11-19	---	6.6-7.8	0	0	0	0
	24-35	4.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	35-60	---	---	---	---	---	---	---
106:								
Arwite	0-5	7.0-16	---	6.6-7.8	0	0	0	0
	5-32	11-19	---	6.6-8.4	0	0	0	0
	32-60	4.0-10	---	7.4-8.4	1-5	0	0.0-2.0	0
Elwop	0-4	7.0-16	---	6.6-7.3	0	0	0	0
	4-24	11-19	---	6.6-7.8	0	0	0	0
	24-35	4.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	35-60	---	---	---	---	---	---	---
107:								
Arwite	0-5	7.0-16	---	6.6-7.8	0	0	0	0
	5-32	11-19	---	6.6-8.4	0	0	0	0
	32-60	4.0-10	---	7.4-8.4	1-5	0	0.0-2.0	0
Vonalf	0-6	5.0-13	---	6.6-7.8	0	0	0	0
	6-34	6.0-11	---	6.6-7.8	0	0	0	0
	34-60	4.0-10	---	7.4-8.4	1-5	0	0.0-2.0	0
122:								
Cushman	0-2	7.0-13	---	6.6-7.8	0	0	0	0
	2-23	13-19	---	7.4-8.4	0	0	0	0
	23-30	10-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
	30-60	---	---	---	---	---	---	---
Cambria	0-2	7.0-13	---	6.6-7.3	0	0	0	0
	2-10	13-19	---	6.6-7.8	0	0	0	0
	10-60	10-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
131:								
Deekay	0-4	9.0-19	---	6.6-7.3	0	0	0	0
	4-24	13-20	---	6.6-8.4	0	0	0	0
	24-60	7.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
132:								
Deekay	0-4	9.0-19	---	6.6-7.3	0	0	0	0
	4-24	13-20	---	6.6-8.4	0	0	0	0
	24-60	7.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
Moorhead	0-5	15-18	---	6.6-7.3	0	0	0	0
	5-35	20-27	---	6.6-8.4	0	0	0	0
	35-60	16-22	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
133:								
Deekay---------------	0-4	9.0-19	---	6.6-7.3	0	0	0	0
	4-24	13-20	---	6.6-8.4	0	0	0	0
	24-60	7.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
Moorhead-------------	0-5	15-18	---	6.6-7.3	0	0	0	0
	5-35	20-27	---	6.6-8.4	0	0	0	0
	35-60	16-22	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
134:								
Deekay---------------	0-4	9.0-19	---	6.6-7.3	0	0	0	0
	4-24	13-20	---	6.6-8.4	0	0	0	0
	24-60	7.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-1
Oldwolf--------------	0-3	9.0-19	---	6.6-7.3	0	0	0	0
	3-21	13-20	---	6.6-8.4	0	0	0	0
	21-32	7.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
	32-60	---	---	---	---	---	---	---
135:								
Deekay---------------	0-4	9.0-19	---	6.6-7.3	0	0	0	0
	4-24	13-20	---	6.6-8.4	0	0	0	0
	24-60	7.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-1
Oldwolf--------------	0-3	9.0-19	---	6.6-7.3	0	0	0	0
	3-21	13-20	---	6.6-8.4	0	0	0	0
	21-32	7.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
	32-60	---	---	---	---	---	---	---
136:								
Deekay---------------	0-4	9.0-19	---	6.6-7.3	0	0	0	0
	4-24	13-20	---	6.6-8.4	0	0	0	0
	24-60	7.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
Ziggy----------------	0-5	9.0-19	---	6.6-7.8	0-1	0	0	0
	5-14	11-20	---	7.4-8.4	0-10	0	0	0
	14-60	10-18	---	7.9-8.4	5-15	0	0.0-2.0	0-3
137:								
Echeta---------------	0-3	17-26	---	6.6-7.8	0	0	0	0
	3-15	18-27	---	7.4-8.4	0-10	0	0	0
	15-60	15-26	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
138:								
Echeta---------------	0-3	17-26	---	6.6-7.8	0	0	0	0
	3-15	18-27	---	7.4-8.4	0-10	0	0	0
	15-60	15-26	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Cromack--------------	0-6	17-26	---	6.6-8.4	0-3	0	0	0
	6-14	18-27	---	7.4-8.4	0-10	0	0	0
	14-29	15-26	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
	29-60	---	---	---	---	---	---	---
144:								
Forkwood-------------	0-2	9.0-16	---	6.6-7.8	0	0	0	0
	2-23	11-19	---	6.6-8.4	0	0	0	0
	23-60	8.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
146:								
Forkwood-------------	0-2	9.0-16	---	6.6-7.8	0	0	0	0
	2-23	11-19	---	6.6-8.4	0	0	0	0
	23-60	8.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
Cushman--------------	0-2	7.0-13	---	6.6-7.8	0	0	0	0
	2-23	13-19	---	7.4-8.4	0	0	0	0
	23-30	10-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
	30-60	---	---	---	---	---	---	---
147:								
Forkwood-------------	0-2	9.0-16	---	6.6-7.8	0	0	0	0
	2-23	11-19	---	6.6-8.4	0	0	0	0
	23-60	8.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-1
Cushman--------------	0-2	7.0-13	---	6.6-7.8	0	0	0	0
	2-23	13-19	---	7.4-8.4	0	0	0	0
	23-30	10-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
	30-60	---	---	---	---	---	---	---
148:								
Forkwood-------------	0-2	9.0-16	---	6.6-7.8	0	0	0	0
	2-23	11-19	---	6.6-8.4	0	0	0	0
	23-60	8.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
Ulm------------------	0-2	9.0-16	---	6.6-7.3	0	0	0	0
	2-22	19-27	---	6.6-8.4	0	0	0	0
	22-60	15-23	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
149:								
Forkwood-------------	0-2	9.0-16	---	6.6-7.8	0	0	0	0
	2-23	11-19	---	6.6-8.4	0	0	0	0
	23-60	8.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
Ulm------------------	0-2	9.0-16	---	6.6-7.3	0	0	0	0
	2-22	19-27	---	6.6-8.4	0	0	0	0
	22-60	15-23	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
151:								
Haverdad-------------	0-4	12-16	---	6.6-8.4	0-5	0	0.0-1.0	0
	4-60	12-16	---	7.4-9.0	1-10	0	0.0-5.0	0-3
155:								
Heldt, saline--------	0-2	17-24	---	7.4-8.4	0-5	0	0.0-2.0	0-5
	2-22	19-27	---	7.9-9.0	5-10	0-1	8.0-16.0	2-13
	22-60	19-27	---	7.9-9.0	5-10	0-1	8.0-16.0	2-13
Bidman, saline-------	0-4	9.0-17	---	6.6-7.8	0	0	0.0-2.0	0
	4-13	19-27	---	7.4-8.4	0	0-1	4.0-8.0	2-10
	13-60	15-24	---	7.9-9.0	5-10	0-1	8.0-16.0	2-13
162:								
Lismas---------------	0-3	19-32	---	6.1-7.8	0	0	0	0
	3-16	29-41	---	6.1-7.8	0	0-2	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---
Mittenbutte, cool----	0-4	7.0-13	---	6.1-7.3	0	0	0	0
	4-18	5.0-10	---	6.6-7.8	0	0	0	0
	18-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
162:(cont.)								
Sabatka--------------	0-3	22-32	---	6.6-7.8	0	0	0	0
	3-19	29-44	---	6.6-7.8	0	0	0	0
	19-30	29-44	---	6.1-7.8	0	0-2	0	0-5
	30-60	---	---	---	---	---	---	---
164:								
Lismas---------------	0-3	19-32	---	6.1-7.8	0	0	0	0
	3-16	29-41	---	6.1-7.8	0	0-2	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---
Sabatka--------------	0-3	22-32	---	6.6-7.8	0	0	0	0
	3-19	29-44	---	6.6-7.8	0	0	0	0
	19-30	29-44	---	6.1-7.8	0	0-2	0	0-5
	30-60	---	---	---	---	---	---	---
Badland--------------	0-60	---	---	---	---	---	---	---
166:								
Jaywest--------------	0-7	9.0-19	---	6.1-7.3	0	0	0	0
	7-36	18-27	---	6.6-8.4	0	0	0	0
	36-60	15-23	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
167:								
Jaywest--------------	0-7	9.0-19	---	6.1-7.3	0	0	0	0
	7-36	18-27	---	6.6-8.4	0	0	0	0
	36-60	15-23	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Moorhead-------------	0-5	15-18	---	6.6-7.3	0	0	0	0
	5-35	20-27	---	6.6-8.4	0	0	0	0
	35-60	16-22	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
168:								
Jaywest--------------	0-7	9.0-19	---	6.1-7.3	0	0	0	0
	7-36	18-27	---	6.6-8.4	0	0	0	0
	36-60	15-23	---	7.9-8.4	5-15	0-1	0.0-2.0	0-5
Spottedhorse---------	0-4	9.0-19	---	6.1-7.8	0	0	0	0
	4-27	18-27	---	6.6-8.4	0	0	0	0
	27-35	15-23	---	7.9-8.4	5-15	0	0.0-2.0	0-3
	35-60	---	---	---	---	---	---	---
170:								
Keeline--------------	0-6	4.0-7.0	---	7.4-8.4	0-5	0	0	0
	6-60	5.0-9.0	---	7.9-8.4	1-5	0	0.0-2.0	0
Tullock--------------	0-4	4.0-7.0	---	6.6-7.8	0-2	0	0	0
	4-28	1.0-4.0	---	7.4-8.4	1-5	0	0.0-2.0	0
	28-60	---	---	---	---	---	---	---
174:								
Brislawn-------------	0-6	9.0-19	---	6.1-7.3	0	0	0	0
	6-21	18-27	---	6.6-7.8	0	0	0	0
	21-31	16-25	---	7.4-8.4	0-5	0	0.0-2.0	0
	31-37	10-19	---	7.9-8.4	5-15	0	0.0-2.0	0-3
	37-60	---	---	6.6-7.8	0-5	0	0	0
Rockybutte-----------	0-5	9.0-19	---	6.6-7.8	0	0	0	0
	5-23	11-20	---	6.6-7.8	0	0	0	0
	23-38	10-19	---	7.4-8.4	5-15	0	0.0-2.0	0-3
	38-60	---	---	6.6-7.8	---	0	0	0

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
174:(cont.)								
Ironbutte------------	0-4	9.0-19	---	6.6-7.8	0	0	0	0
	4-12	5.0-14	---	6.6-8.4	0-3	0	0	0
	12-60	0.0-0.0	---	6.6-7.8	0-1	0	0	0
176:								
Leiter---------------	0-3	16-24	---	6.6-7.8	0	0	0	0
	3-22	26-37	---	6.6-8.4	0	0	0	0
	22-33	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
	33-60	---	---	---	---	---	---	---
Cromack--------------	0-6	17-26	---	6.6-8.4	0-3	0	0	0
	6-14	18-27	---	7.4-8.4	0-10	0	0	0
	14-29	15-26	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
	29-60	---	---	---	---	---	---	---
181:								
Moorhead-------------	0-4	16-24	---	6.6-7.3	0	0	0	0
	4-24	26-37	---	6.6-8.4	0	0	0	0
	24-60	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
182:								
Moorhead-------------	0-3	15-18	---	6.6-7.3	0	0	0	0
	3-25	20-27	---	6.6-8.4	0	0	0	0
	25-60	16-22	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
183:								
Moorhead-------------	0-4	16-24	---	6.6-7.3	0	0	0	0
	4-24	26-37	---	6.6-8.4	0	0	0	0
	24-60	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Leiter---------------	0-3	16-24	---	6.6-7.8	0	0	0	0
	3-22	26-37	---	6.6-8.4	0	0	0	0
	22-33	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
	33-60	---	---	---	---	---	---	---
184:								
Moorhead-------------	0-4	16-24	---	6.6-7.3	0	0	0	0
	4-24	26-37	---	6.6-8.4	0	0	0	0
	24-60	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Leiter---------------	0-3	16-24	---	6.6-7.8	0	0	0	0
	3-22	26-37	---	6.6-8.4	0	0	0	0
	22-33	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	33-60	---	---	---	---	---	---	---
185:								
Moskee---------------	0-9	7.0-16	---	6.6-7.3	0	0	0	0
	9-32	11-19	---	6.6-8.4	0	0	0	0
	32-60	4.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
187:								
Nuncho---------------	0-12	17-20	---	6.6-7.3	0	0	0	0
	12-30	22-27	---	6.6-7.8	0	0	0	0
	30-60	15-20	---	7.9-8.4	5-15	0	0.0-2.0	0-3
191:								
Pits-----------------	---	---	---	---	---	---	---	---
Dumps----------------	---	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
192:								
Platmak	0-4	9.0-19	---	6.6-7.3	0	0	0	0
	4-27	18-27	---	6.6-8.4	0	0	0	0
	27-60	15-23	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
198:								
Recluse	0-5	9.0-19	---	6.6-7.3	0	0	0	0
	5-23	13-20	---	6.6-8.4	0	0	0	0
	23-60	7.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
203:								
Rockypoint	0-3	14-18	---	6.6-7.8	0-5	0	0.0-2.0	0
	3-60	12-19	---	7.4-8.4	1-10	0-1	4.0-8.0	0-3
Iwait	0-6	9.0-19	---	6.6-8.4	0-5	0	0	0
	6-60	10-18	---	7.9-8.4	5-15	0	0.0-2.0	0-3
204:								
Samday	0-2	17-23	---	6.6-8.4	0-5	0	0.0-2.0	0
	2-16	18-26	---	7.4-8.4	5-10	0-1	2.0-4.0	0-5
	16-60	---	---	---	---	---	---	---
Samday, cool	0-1	17-23	---	6.6-8.4	0-5	0	0.0-2.0	0
	1-10	18-26	---	7.4-8.4	5-10	0-1	2.0-4.0	0-5
	10-60	---	---	---	---	---	---	---
Shingle	0-3	16-23	---	6.6-8.4	0-1	0	0	0
	3-16	10-17	---	7.9-8.4	5-10	0	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---
206:								
Samday	0-2	17-23	---	6.6-8.4	0-5	0	0.0-2.0	0
	2-16	18-26	---	7.4-8.4	5-10	0-1	2.0-4.0	0-5
	16-60	---	---	---	---	---	---	---
Shingle	0-2	9.0-16	---	6.6-8.4	0-5	0	0	0
	2-12	10-18	---	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---
Badland	0-60	---	---	---	---	---	---	---
207:								
Cromack	0-6	17-26	---	6.6-8.4	0-3	0	0	0
	6-14	18-27	---	7.4-8.4	0-10	0	0	0
	14-29	15-26	---	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	29-60	---	---	---	---	---	---	---
Fairburn	0-4	9.0-19	---	6.6-8.4	0-5	0	0	0
	4-15	11-19	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	15-60	---	---	---	---	---	---	---
Ucross	0-5	14-18	---	6.6-8.4	0-5	0	0	0
	5-31	12-18	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	31-60	---	---	---	---	---	---	---
210:								
Shingle	0-2	9.0-16	---	6.6-8.4	0-5	0	0	0
	2-12	10-18	---	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
210:(cont.)								
Taluce---------------	0-2	7.0-13	---	6.6-8.4	0-3	0	0	0
	2-18	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	18-60	---	---	---	---	---	---	---
215:								
Theedle--------------	0-2	11-18	---	6.6-8.4	0-5	0	0	0
	2-28	10-16	---	7.4-8.4	5-15	0	0.0-2.0	0-3
	28-60	---	---	---	---	---	---	---
Kishona--------------	0-4	9.0-16	---	6.6-8.4	0-5	0	0	0
	4-60	10-17	---	7.9-8.4	5-15	0	0.0-2.0	0-3
216:								
Theedle--------------	0-2	11-18	---	6.6-8.4	0-5	0	0	0
	2-28	10-16	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	28-60	---	---	---	---	---	---	---
Kishona--------------	0-4	9.0-16	---	6.6-8.4	0-5	0	0	0
	4-60	10-17	---	7.9-8.4	5-15	0	0.0-2.0	0-5
Shingle--------------	0-2	9.0-16	---	6.6-8.4	0-5	0	0	0
	2-12	10-18	---	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---
217:								
Theedle--------------	0-2	11-18	---	6.6-8.4	0-5	0	0	0
	2-28	10-16	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	28-60	---	---	---	---	---	---	---
Shingle--------------	0-2	9.0-16	---	6.6-8.4	0-5	0	0	0
	2-12	10-18	---	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---
219:								
Torriarents----------	0-4	11-21	---	6.6-8.4	1-5	0-1	0.0-2.0	0-5
	4-60	10-20	---	6.6-8.4	1-10	0-1	2.0-4.0	0-5
Torriorthents--------	0-5	11-21	---	6.6-8.4	1-5	0-1	0.0-2.0	0-5
	5-60	10-20	---	6.6-8.4	1-10	0-1	2.0-4.0	0-5
220:								
Pitchdraw------------	0-4	6.0-12	---	7.4-7.8	0-4	0	0	0
	4-31	5.0-9.0	---	7.9-8.4	1-5	0	0	0
	31-60	---	---	---	---	---	---	---
Ashollow-------------	0-5	6.0-15	---	7.4-8.4	0-2	0	0	0
	5-60	3.0-10	---	7.4-8.4	1-5	0	0.0-2.0	0
Niobrara-------------	0-3	2.0-5.0	---	6.6-7.8	0-1	0	0	0
	3-12	1.0-4.0	---	6.6-7.8	0	0	0	0
	12-60	---	---	---	---	---	---	---
221:								
Turnercrest----------	0-2	7.0-11	---	6.6-8.4	0-3	0	0	0
	2-32	7.0-11	---	7.4-8.4	1-5	0	0.0-2.0	0
	32-60	---	---	---	---	---	---	---
Keeline--------------	0-4	6.0-11	---	6.6-8.4	0-1	0	0	0
	4-60	5.0-9.0	---	7.9-8.4	1-5	0	0.0-2.0	0

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
221:(cont.)								
Taluce	0-2	5.0-11	---	6.6-8.4	0-3	0	0.0-2.0	0
	2-14	5.0-9.0	---	7.4-9.0	1-5	0	0.0-2.0	0
	14-60	---	---	---	---	---	---	---
223:								
Ucross	0-5	14-18	---	6.6-8.4	0-5	0	0	0
	5-31	12-18	---	7.4-8.4	5-15	0	0.0-2.0	0-3
	31-60	---	---	---	---	---	---	---
224:								
Ucross	0-5	14-18	---	6.6-8.4	0-5	0	0	0
	5-31	12-18	---	7.4-8.4	5-15	0	0.0-2.0	0-3
	31-60	---	---	---	---	---	---	---
Iwait	0-6	9.0-19	---	6.6-8.4	0-5	0	0	0
	6-60	10-18	---	7.9-8.4	5-15	0	0.0-2.0	0-3
225:								
Ucross	0-5	14-18	---	6.6-8.4	0-5	0	0	0
	5-31	12-18	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	31-60	---	---	---	---	---	---	---
Iwait	0-6	9.0-19	---	6.6-8.4	0-5	0	0	0
	6-60	10-18	---	7.9-8.4	5-15	0	0.0-2.0	0-3
Fairburn	0-4	9.0-19	---	6.6-8.4	0-5	0	0	0
	4-15	11-19	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	15-60	---	---	---	---	---	---	---
228:								
Ulm	0-4	16-24	---	6.6-7.3	0	0	0	0
	4-25	26-37	---	6.6-8.4	0	0	0	0
	25-60	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Renohill	0-4	16-24	---	6.6-7.8	0	0	0	0
	4-24	26-37	---	6.6-8.4	0	0	0	0
	24-35	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
	35-60	---	---	---	---	---	---	---
229:								
Ulm	0-4	16-24	---	6.6-7.3	0	0	0	0
	4-25	26-37	---	6.6-8.4	0	0	0	0
	25-60	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Renohill	0-4	16-24	---	6.6-7.8	0	0	0	0
	4-24	26-37	---	6.6-8.4	0	0	0	0
	24-35	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
	35-60	---	---	---	---	---	---	---
233:								
Ustic Torriorthents, gullied	0-4	10-12	---	6.6-7.8	0-5	0	0.0-2.0	0-5
	4-35	9.0-11	---	7.9-8.4	1-10	0	0.0-2.0	0-5
	35-60	---	---	---	---	---	---	---
234:								
Ustic Torriorthents	0-4	9.0-19	---	6.6-8.4	0-10	0	0.0-2.0	0-5
	4-35	9.0-19	---	6.6-8.4	1-10	0	0.0-2.0	0-5
	35-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
234:(cont.)								
Badland	0-60	---	---	---	---	---	---	---
236:								
Vonalee	0-3	5.0-13	---	6.6-7.8	0	0	0	0
	3-24	6.0-11	---	6.6-7.8	0	0	0	0
	24-60	4.0-10	---	7.4-8.4	1-5	0	0.0-2.0	0
Terro	0-3	5.0-13	---	6.6-7.8	0	0	0	0
	3-16	6.0-11	---	6.6-7.8	0	0	0	0
	16-30	4.0-10	---	7.4-8.4	1-5	0	0.0-2.0	0
	30-60	---	---	---	---	---	---	---
238:								
Vonalf	0-6	5.0-13	---	6.6-7.8	0	0	0	0
	6-34	6.0-11	---	6.6-7.8	0	0	0	0
	34-60	4.0-10	---	7.4-8.4	1-5	0	0.0-2.0	0
Xema	0-4	5.0-13	---	6.6-7.8	0	0	0	0
	4-22	6.0-11	---	6.6-7.8	0	0	0	0
	22-31	4.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	31-60	---	---	---	---	---	---	---
239:								
Ironbutte	0-4	9.0-19	---	6.6-7.8	0	0	0	0
	4-12	5.0-14	---	6.6-8.4	0-3	0	0	0
	12-60	0.0-0.0	---	6.6-7.8	0-1	0	0	0
Fairburn	0-4	9.0-19	---	6.6-8.4	0-5	0	0	0
	4-15	11-19	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	15-60	---	---	---	---	---	---	---
Mittenbutte	0-3	7.0-13	---	6.6-8.4	0-3	0	0	0
	3-16	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	16-60	---	---	---	---	---	---	---
241:								
Ironbutte	0-4	9.0-19	---	6.6-7.8	0	0	0	0
	4-12	5.0-14	---	6.6-8.4	0-3	0	0	0
	12-60	0.0-0.0	---	6.6-7.8	0-1	0	0	0
Ironbutte, thin solum	0-2	9.0-19	---	6.6-7.8	0	0	0	0
	2-10	5.0-14	---	6.6-8.4	0-3	0	0	0
	10-60	0.0-0.0	---	6.6-7.8	0-1	0	0	0
244:								
Muleherder	0-2	7.0-17	---	6.6-7.8	0	0	0	0
	2-16	6.0-15	---	6.6-8.4	0-5	0	0	0
	16-33	4.0-12	---	6.6-8.4	0-10	0	0.0-2.0	0-3
	33-60	0.0-0.0	---	6.6-7.8	0-5	0	0	0
Ironbutte	0-4	9.0-19	---	6.6-7.8	0	0	0	0
	4-12	5.0-14	---	6.6-8.4	0-3	0	0	0
	12-60	0.0-0.0	---	6.6-7.8	0-1	0	0	0
248:								
Ziggy	0-5	9.0-19	---	6.6-7.8	0-1	0	0	0
	5-14	11-20	---	7.4-8.4	0-10	0	0	0
	14-60	10-18	---	7.9-8.4	5-15	0	0.0-2.0	0-3

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
248:(cont.)								
Iwait----------------	0-6	9.0-19	---	6.6-8.4	0-5	0	0	0
	6-60	10-18	---	7.9-8.4	5-15	0	0.0-2.0	0-3
249:								
Ziggy----------------	0-5	9.0-19	---	6.6-7.8	0-1	0	0	0
	5-14	11-20	---	7.4-8.4	0-10	0	0	0
	14-60	10-18	---	7.9-8.4	5-15	0	0.0-2.0	0-3
Iwait----------------	0-6	9.0-19	---	6.6-8.4	0-5	0	0	0
	6-60	10-18	---	7.9-8.4	5-15	0	0.0-2.0	0-3
250:								
Ziggy----------------	0-5	9.0-19	---	6.6-7.8	0-1	0	0	0
	5-14	11-20	---	7.4-8.4	0-10	0	0	0
	14-60	10-18	---	7.9-8.4	5-15	0	0.0-2.0	0-3
Ucross---------------	0-5	14-18	---	6.6-8.4	0-5	0	0	0
	5-31	12-18	---	7.4-8.4	5-15	0	0.0-2.0	0-3
	31-60	---	---	---	---	---	---	---
Oldwolf--------------	0-3	9.0-19	---	6.6-7.3	0	0	0	0
	3-21	13-20	---	6.6-8.4	0	0	0	0
	21-32	7.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
	32-60	---	---	---	---	---	---	---
251:								
Water----------------	---	---	---	---	---	---	---	---
252:								
Absted---------------	0-2	7.0-14	---	6.6-7.8	0	0	0.0-2.0	0-5
	2-8	18-27	---	7.4-8.4	0	0	0.0-4.0	5-10
	8-13	18-27	---	7.9-9.0	5-10	0-2	2.0-8.0	13-30
	13-60	15-24	---	8.5-9.6	5-15	1-3	8.0-16.0	10-30
Slickspots-----------	0-60	20-30	---	9.0-11.0	0-5	0-5	8.0-20.0	15-45
253:								
Absted---------------	0-2	7.0-14	---	6.6-7.8	0	0	0.0-2.0	0
	2-8	18-27	---	7.4-8.4	0	0	2.0-4.0	5-10
	8-13	18-27	---	7.9-9.6	5-10	0-2	8.0-16.0	13-30
	13-60	15-24	---	7.9-9.6	5-15	1-3	8.0-16.0	10-30
Arvada---------------	0-4	7.0-14	---	6.6-8.4	0	0	0.0-2.0	0
	4-14	18-27	---	8.5-9.6	0-5	0	8.0-16.0	15-30
	14-20	18-27	---	8.5-9.6	5-10	0-2	8.0-16.0	15-30
	20-60	15-24	---	7.9-9.6	5-15	1-3	8.0-16.0	10-30
Slickspots-----------	0-60	20-30	---	8.4-9.6	0-5	0-5	8.0-20.0	15-45
254:								
Badland--------------	0-60	---	---	---	---	---	---	---
Lismas---------------	0-3	19-32	---	6.1-7.8	0	0	0	0
	3-16	29-41	---	6.1-7.8	0	0-2	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
255:								
Bidman	0-3	6.0-16	---	6.6-7.8	0	0	0	0
	3-21	21-40	---	6.6-8.4	0	0	0	0
	21-60	16-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Parmleed	0-4	12-24	---	6.6-7.8	0	0	0	0
	4-26	25-37	---	6.6-8.4	0	0	0	0
	26-37	21-31	---	7.4-8.4	5-15	0-1	0.0-2.0	0-3
	37-60	---	---	---	---	---	---	---
256:								
Bidman	0-4	10-25	---	6.1-7.3	0	0	0.0-2.0	0
	4-14	25-35	---	6.6-7.8	0	0	0.0-2.0	0
	14-26	25-35	---	7.9-9.0	4-14	0-1	0.0-2.0	0-3
	26-60	17-25	---	7.9-9.0	4-14	0-1	0.0-2.0	0-3
Ulm	0-3	15-25	---	6.6-7.3	0	0	0.0-2.0	0
	3-19	25-35	---	6.6-7.8	0	0	0.0-2.0	0
	19-60	20-30	---	7.9-9.0	5-15	0-1	0.0-2.0	0-3
257:								
Bonfri, deep	0-6	4.0-12	---	6.6-7.3	0	0	0	0
	6-19	8.0-21	---	6.6-7.8	0	0	0	0
	19-34	6.0-18	---	7.4-8.4	2-10	0	0.0-2.0	0
	34-58	3.0-11	---	7.4-8.4	1-5	0	0.0-2.0	0
	58-60	---	---	---	---	---	---	---
Bonfri	0-4	7.0-16	---	6.6-7.8	0	0	0	0
	4-19	11-20	---	6.6-7.8	0	0	0	0
	19-29	4.0-11	---	7.4-8.4	1-5	0	0.0-2.0	0
	29-60	---	---	---	---	---	---	---
258:								
Bonfri	0-4	11-20	---	6.6-7.8	0	0	0	0
	4-22	13-20	---	6.6-7.8	0	0	0	0
	22-32	9.0-17	---	7.9-8.4	5-15	0	0.0-2.0	0-3
	32-60	---	---	---	---	---	---	---
Kirby	0-4	9.0-19	---	6.6-7.8	0-3	0	0	0
	4-17	6.0-15	---	7.4-8.4	5-10	0	0.0-2.0	0
	17-60	0.0-0.0	---	6.6-7.8	0-3	0	0	0
259:								
Bonfri	0-1	---	---	5.1-6.5	---	---	---	---
	1-5	7.0-16	---	6.6-7.8	0	0	0	0
	5-20	11-20	---	6.6-7.8	0	0	0	0
	20-30	4.0-11	---	7.4-8.4	1-5	0	0.0-2.0	0
	30-60	---	---	---	---	---	---	---
Twilight	0-1	---	---	5.1-6.5	---	---	---	---
	1-5	6.0-12	---	6.6-7.8	0	0	0	0
	5-20	6.0-11	---	6.6-7.8	0	0	0	0
	20-29	2.0-9.0	---	7.4-8.4	1-4	0	0	0
	29-60	---	---	---	---	---	---	---
Blacksheep	0-1	---	---	5.1-6.5	---	---	---	---
	1-4	5.0-11	---	7.9-8.4	0-4	0	0	0
	4-16	4.0-10	---	7.9-8.4	1-4	0	0	0
	16-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
260:								
Cabbart, wooded------	0-1	---	---	5.1-6.5	---	---	---	---
	1-4	9.0-19	---	7.4-8.4	1-5	0	0	0
	4-16	11-19	---	7.9-8.4	5-15	0	0.0-4.0	0-5
	16-60	---	---	---	---	---	---	---
Volborg, wooded------	0-1	---	---	5.1-6.5	---	---	---	---
	1-3	19-32	---	5.6-6.5	0	0	0.0-2.0	0
	3-16	29-41	---	5.1-6.5	0	0-2	0.0-4.0	0
	16-60	---	---	---	---	---	---	---
Badland--------------	0-60	---	---	---	---	---	---	---
261:								
Cabbart--------------	0-3	9.0-19	---	7.4-8.4	1-5	0	0	0
	3-15	11-19	---	7.9-8.4	5-15	0	0.0-4.0	0-5
	15-60	---	---	---	---	---	---	---
Yawdim---------------	0-3	23-32	---	6.6-7.8	0-4	0	0.0-2.0	0
	3-16	25-37	---	7.4-8.4	5-15	0-3	0.0-4.0	0-5
	16-60	---	---	---	---	---	---	---
Badland--------------	0-60	---	---	---	---	---	---	---
262:								
Cambria--------------	0-2	9.0-16	---	6.6-7.8	0	0	0	0
	2-8	10-17	---	6.6-8.4	0-5	0	0	0
	8-60	9.0-15	---	7.9-8.4	5-15	0	0.0-2.0	0-3
Kishona--------------	0-4	9.0-16	---	6.6-8.4	0-5	0	0	0
	4-60	10-17	---	7.9-8.4	5-15	0	0.0-2.0	0-3
Zigweid--------------	0-4	12-18	---	6.6-7.8	0-1	0	0	0
	4-17	12-20	---	7.4-8.4	5-10	0	0	0
	17-60	12-20	---	7.9-8.4	5-15	0	0.0-2.0	0-3
263:								
Cedar Butte----------	0-7	8.0-13	---	6.1-7.8	0	0	0.0-2.0	0
	7-15	21-40	---	7.4-9.0	0-5	0	4.0-8.0	5-20
	15-26	21-40	---	7.9-9.6	5-10	0-2	8.0-16.0	13-30
	26-60	18-36	---	7.9-9.6	5-15	0-3	8.0-16.0	10-30
Slickspots-----------	0-60	20-30	---	8.4-9.6	0-5	0-5	8.0-20.0	15-45
264:								
Clarkelen------------	0-5	7.0-12	---	7.4-8.4	0-3	0	0	0
	5-60	6.0-11	---	7.9-8.4	1-5	0	0.0-2.0	0-3
Draknab--------------	0-5	5.0-13	---	6.6-7.8	0-3	0	0	0
	5-60	2.0-8.0	---	7.4-8.4	0-5	0	0.0-2.0	0-3
265:								
Clarkelen------------	0-5	7.0-12	---	7.4-8.4	0-3	0	0	0
	5-60	6.0-11	---	7.9-8.4	1-5	0	0.0-2.0	0-3
Draknab--------------	0-5	5.0-13	---	6.6-7.8	0-3	0	0	0
	5-60	2.0-8.0	---	7.4-8.4	0-5	0	0.0-2.0	0-3
Boruff---------------	0-2	30-48	---	6.6-7.8	0-5	0	2.0-4.0	0-5
	2-60	25-40	---	7.4-9.0	0-10	0-1	4.0-8.0	2-10

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
266:								
Coaliams, moderately saline	0-4	12-16	---	7.4-8.4	0	0	2.0-4.0	0
	4-22	10-15	---	7.4-8.4	5-10	0-3	8.0-16.0	2-10
	22-60	11-17	---	7.4-8.4	5-15	0-3	8.0-16.0	2-10
267:								
Cromack	0-6	17-26	---	6.6-8.4	0-3	0	0	0
	6-14	18-27	---	7.4-8.4	0-10	0	0	0
	14-29	15-26	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
	29-60	---	---	---	---	---	---	---
Samsil	0-4	23-32	---	7.4-8.4	0-5	0	0.0-2.0	0
	4-16	25-37	---	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---
268:								
Decolney	0-3	10-14	---	6.6-7.8	0	0	0	0
	3-22	12-16	---	6.6-7.8	0	0	0	0
	22-60	8.0-14	---	7.4-8.4	0-3	0	0.0-2.0	0-3
Hiland	0-3	7.0-14	---	6.6-7.3	0	0	0	0
	3-30	12-17	---	6.6-7.8	0	0	0	0
	30-60	5.0-11	---	7.9-8.4	1-5	0	0.0-2.0	0-3
269:								
Decolney	0-3	10-14	---	6.6-7.8	0	0	0	0
	3-22	12-16	---	6.6-7.8	0	0	0	0
	22-60	8.0-14	---	7.4-8.4	0-3	0	0.0-2.0	0-3
Hiland	0-3	7.0-14	---	6.6-7.3	0	0	0	0
	3-30	12-17	---	6.6-7.8	0	0	0	0
	30-60	5.0-11	---	7.9-8.4	1-5	0	0.0-2.0	0-3
270:								
Deekay	0-4	9.0-19	---	6.6-7.3	0	0	0	0
	4-24	13-20	---	6.6-8.4	0	0	0	0
	24-60	7.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
Deekay, stratified substratum	0-5	9.0-19	---	6.6-7.3	0	0	0	0
	5-25	11-20	---	6.6-8.4	0	0	0	0
	25-60	5.0-15	---	7.9-8.4	5-10	0	0.0-2.0	0-3
271:								
Delpoint	0-4	14-18	---	7.4-8.4	0-5	0	0	0
	4-17	12-18	---	7.4-8.4	0-10	0	0	0
	17-33	12-18	---	7.9-8.4	5-15	0	0.0-2.0	0-5
	33-60	---	---	---	---	---	---	---
Cabbart	0-3	9.0-19	---	7.4-8.4	1-5	0	0	0
	3-15	11-19	---	7.9-8.4	5-15	0	0.0-4.0	0-5
	15-60	---	---	---	---	---	---	---
272:								
Delpoint	0-4	14-18	---	7.4-8.4	0-5	0	0	0
	4-17	12-18	---	7.4-8.4	0-10	0	0	0
	17-33	12-18	---	7.9-8.4	5-15	0	0.0-2.0	0-5
	33-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
272:(cont.)								
Yamacall	0-3	11-20	---	6.6-7.8	0-5	0	0	0
	3-15	12-20	---	6.6-8.4	0-10	0	0	0
	15-60	12-20	---	7.9-8.4	5-15	0	0.0-2.0	0-5
Cabbart	0-3	9.0-19	---	7.4-8.4	1-5	0	0	0
	3-15	11-19	---	7.9-8.4	5-15	0	0.0-4.0	0-5
	15-60	---	---	---	---	---	---	---
273:								
Delpoint, wooded	0-1	---	---	5.1-6.5	---	---	---	---
	1-5	14-18	---	7.4-8.4	0-5	0	0	0
	5-18	12-18	---	7.4-8.4	0-10	0	0	0
	18-34	12-18	---	7.9-8.4	5-15	0	0.0-2.0	0-5
	34-60	---	---	---	---	---	---	---
Yamacall, wooded	0-1	---	---	5.1-6.5	---	---	---	---
	1-4	11-20	---	6.6-7.8	0-5	0	0	0
	4-16	12-20	---	6.6-8.4	3-12	0	0.0-2.0	0
	16-60	12-20	---	7.9-8.4	5-15	0	0.0-2.0	0-5
Cabbart, wooded	0-1	---	---	5.1-6.5	---	---	---	---
	1-4	9.0-19	---	7.4-8.4	1-5	0	0	0
	4-16	11-19	---	7.9-8.4	5-15	0	0.0-4.0	0-5
	16-60	---	---	---	---	---	---	---
274:								
Denied access	---	---	---	---	---	---	---	---
275:								
Echeta	0-3	17-26	---	6.6-7.8	0	0	0	0
	3-15	18-27	---	7.4-8.4	0-10	0	0	0
	15-60	15-26	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Moorhead	0-4	16-24	---	6.6-7.3	0	0	0	0
	4-24	26-37	---	6.6-8.4	0	0	0	0
	24-60	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
276:								
Elwop, wooded	0-1	---	---	5.1-6.5	---	---	---	---
	1-5	7.0-16	---	6.6-7.8	0	0	0	0
	5-25	11-19	---	6.6-7.8	0	0	0	0
	25-35	4.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	35-60	---	---	---	---	---	---	---
Mittenbutte, wooded	0-1	---	---	5.1-6.5	---	---	---	---
	1-4	7.0-13	---	6.6-8.4	0-3	0	0	0
	4-16	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	16-60	---	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---	---
277:								
Fairburn	0-4	9.0-19	---	6.6-8.4	0-5	0	0	0
	4-15	11-19	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	15-60	---	---	---	---	---	---	---
Mittenbutte	0-3	7.0-13	---	6.6-8.4	0-3	0	0	0
	3-16	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	16-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
277:(cont.)								
Badland	0-60	---	---	---	---	---	---	---
278:								
Fairburn	0-4	9.0-19	---	6.6-8.4	0-5	0	0	0
	4-15	11-19	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	15-60	---	---	---	---	---	---	---
Samsil	0-4	23-32	---	7.4-8.4	0-5	0	0.0-2.0	0
	4-16	25-37	---	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---
Badland	0-60	---	---	---	---	---	---	---
279:								
Fairburn, wooded	0-1	---	---	5.1-6.5	---	---	---	---
	1-5	9.0-19	---	6.6-8.4	0-5	0	0	0
	5-16	11-19	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---
Samsil, wooded	0-1	---	---	5.1-6.5	---	---	---	---
	1-5	23-32	---	7.4-8.4	0-5	0	0.0-2.0	0
	5-16	25-37	---	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---
Badland	0-60	---	---	---	---	---	---	---
280:								
Felix	0-5	40-58	---	6.1-7.3	0	0	0	0
	5-30	4.0-58	---	6.6-7.8	0-2	0	0.0-4.0	0-5
	30-50	42-53	---	7.4-8.4	0-2	0	4.0-8.0	0-10
	50-60	35-50	---	7.4-8.4	0-5	0-2	4.0-8.0	0-10
281:								
Foreleft	0-4	9.0-19	---	6.6-7.8	0	0	0	0
	4-26	11-20	---	6.6-8.4	0	0	0	0
	26-60	7.0-17	---	7.9-8.4	5-15	0	0.0-2.0	0-3
282:								
Foreleft	0-4	9.0-19	---	6.6-7.8	0	0	0	0
	4-26	11-20	---	6.6-8.4	0	0	0	0
	26-60	7.0-17	---	7.9-8.4	5-15	0	0.0-2.0	0-3
Bonfri	0-4	11-20	---	6.6-7.8	0	0	0	0
	4-22	13-20	---	6.6-7.8	0	0	0	0
	22-32	9.0-17	---	7.9-8.4	5-15	0	0.0-2.0	0-3
	32-60	---	---	---	---	---	---	---
283:								
Gateson, wooded	0-1	---	---	5.1-6.5	---	---	---	---
	1-4	7.0-14	---	6.1-7.3	0	0	0	0
	4-13	6.0-15	---	6.1-7.3	0	0	0	0
	13-21	10-19	---	5.6-7.3	0	0	0	0
	21-37	10-16	---	5.6-7.3	0	0	0	0
	37-60	---	---	---	---	---	---	---
Xema, wooded	0-1	---	---	5.1-6.5	---	---	---	---
	1-4	6.0-12	---	6.1-7.3	0	0	0	0
	4-17	6.0-11	---	6.1-7.3	0	0	0	0
	17-38	6.0-11	---	5.6-7.3	0	0	0	0
	38-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
283:(cont.)								
Mittenbutte, wooded--	0-1	---	---	5.1-6.5	---	---	---	---
	1-4	5.0-11	---	6.1-7.3	0	0	0	0
	4-13	4.0-10	---	6.1-7.3	0	0	0	0
	13-60	---	---	---	---	---	---	---
284:								
Haverdad-------------	0-5	16-22	---	6.6-8.4	0-3	0	0.0-2.0	0
	5-60	12-20	---	7.4-8.4	5-15	0-1	2.0-4.0	0-5
285:								
Haverdad-------------	0-4	9.0-17	---	6.6-8.4	0-5	0	0.0-2.0	0
	4-60	8.0-20	---	7.4-8.4	1-10	0-1	4.0-8.0	0-5
Boruff---------------	0-2	30-48	---	6.6-8.4	0-3	0	2.0-4.0	0-5
	2-60	25-40	---	7.4-9.0	0-10	0-1	4.0-8.0	5-13
286:								
Havre----------------	0-6	9.0-19	---	6.6-8.4	0-5	0	0.0-2.0	0
	6-60	8.0-22	---	7.4-8.4	5-10	0-1	4.0-8.0	0-5
Bigsandy-------------	0-3	9.0-19	---	7.4-8.4	0-5	0	2.0-4.0	0
	3-10	8.0-22	---	7.9-8.4	5-15	0	2.0-4.0	0
	10-60	7.0-20	---	7.9-9.0	5-15	0-2	4.0-8.0	0-5
287:								
Hiland---------------	0-4	5.0-15	---	6.6-7.8	0	0	0.0-2.0	0
	4-30	15-25	---	7.4-7.8	0	0	0.0-2.0	0
	30-60	5.0-10	---	7.9-9.0	5-10	0	0.0-2.0	0-3
Bowbac---------------	0-4	5.0-15	---	6.6-7.8	0	0	0.0-2.0	0
	4-15	10-20	---	6.6-7.8	0	0	0.0-2.0	0
	15-24	5.0-15	---	7.9-9.0	1-5	0	0.0-2.0	0-3
	24-60	---	---	---	---	---	---	---
288:								
Hiland---------------	0-3	7.0-14	---	6.6-7.3	0	0	0	0
	3-30	12-17	---	6.6-7.8	0	0	0	0
	30-60	5.0-11	---	7.9-8.4	1-5	0	0.0-2.0	0-5
Bowbac---------------	0-3	8.0-12	---	6.6-7.8	0	0	0	0
	3-31	12-20	---	6.6-8.4	0	0	0	0
	31-39	4.0-12	---	7.9-8.4	1-5	0	0.0-2.0	0-5
	39-60	---	---	---	---	---	---	---
289:								
Hiland---------------	0-3	7.0-14	---	6.6-7.3	0	0	0	0
	3-30	12-17	---	6.6-7.8	0	0	0	0
	30-60	5.0-11	---	7.9-8.4	1-5	0	0.0-2.0	0-3
Bowbac---------------	0-3	8.0-12	---	6.6-7.8	0	0	0	0
	3-31	12-20	---	6.6-8.4	0	0	0	0
	31-39	4.0-12	---	7.9-8.4	1-5	0	0.0-2.0	0-3
	39-60	---	---	---	---	---	---	---
290:								
Hiland---------------	0-2	5.0-15	---	6.6-7.8	0	0	0.0-2.0	0
	2-27	15-25	---	7.4-7.8	0	0	0.0-2.0	0
	27-60	5.0-10	---	7.9-9.0	5-10	0	0.0-2.0	0-3

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
290:(cont.)								
Decolney-------------	0-2	5.0-15	---	6.6-7.8	0	0	0.0-2.0	0
	2-11	15-25	---	7.4-8.4	0	0	0.0-2.0	0
	11-60	5.0-10	---	7.4-8.4	0-2	0	0.0-2.0	0-3
291:								
Ironbutte, wooded----	0-1	---	---	5.1-6.5	---	---	---	---
	1-5	9.0-19	---	6.6-7.8	0	0	0	0
	5-13	5.0-14	---	6.6-8.4	0-3	0	0	0
	13-60	0.0-0.0	---	6.6-7.8	0-1	0	0	0
Fairburn, wooded-----	0-1	---	---	5.1-6.5	---	---	---	---
	1-5	9.0-19	---	6.6-8.4	0-5	0	0	0
	5-16	11-19	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---
Mittenbutte, wooded--	0-1	---	---	5.1-6.5	---	---	---	---
	1-4	7.0-13	---	6.6-8.4	0-3	0	0	0
	4-16	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	16-60	---	---	---	---	---	---	---
292:								
Jaywest--------------	0-7	9.0-19	---	6.1-7.3	0	0	0	0
	7-36	18-27	---	6.6-8.4	0	0	0	0
	36-60	15-23	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Jaywest, stratified substratum----------	0-4	11-17	---	6.1-7.8	0	0	0	0
	4-23	20-28	---	6.6-7.8	0	0	0	0
	23-60	11-18	---	7.9-8.4	5-10	0	0.0-2.0	0-3
293:								
Jaywest, saline substratum----------	0-7	11-20	---	6.1-7.3	0	0	0	0
	7-15	25-41	---	7.4-8.4	0	0	0.0-2.0	0-5
	15-30	24-37	---	7.9-9.0	5-10	0-2	8.0-16.0	10-30
	30-60	12-30	---	7.9-9.0	5-15	0-3	8.0-16.0	10-30
Cedar Butte----------	0-7	8.0-13	---	6.1-7.8	0	0	0.0-2.0	0
	7-15	21-40	---	7.4-9.0	0-5	0	4.0-8.0	5-20
	15-26	21-40	---	7.9-9.6	5-10	0-2	8.0-16.0	13-30
	26-60	18-36	---	7.9-9.6	5-15	0-3	8.0-16.0	10-30
Slickspots-----------	0-60	20-30	---	8.4-9.6	0-5	0-5	8.0-20.0	15-45
294:								
Kirby, wooded--------	0-1	---	---	5.1-6.5	---	---	---	---
	1-5	9.0-19	---	6.6-7.8	0-3	0	0	0
	5-18	6.0-15	---	7.4-8.4	5-10	0	0.0-2.0	0
	18-60	0.0-0.0	---	6.6-7.8	0-3	0	0	0
Cabbart, wooded------	0-1	---	---	5.1-6.5	---	---	---	---
	1-4	9.0-19	---	7.4-8.4	1-5	0	0	0
	4-16	11-19	---	7.9-8.4	5-15	0	0.0-4.0	0-5
	16-60	---	---	---	---	---	---	---
Blacksheep, wooded---	0-1	---	---	5.1-6.5	---	---	---	---
	1-4	5.0-11	---	6.6-8.4	0-4	0	0	0
	4-16	4.0-10	---	7.9-8.4	1-4	0	0	0
	16-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
295:								
Lismas---------------	0-3	19-32	---	6.1-7.8	0	0	0	0
	3-16	29-41	---	6.1-7.8	0	0-2	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---
Sabatka--------------	0-3	22-32	---	6.6-7.8	0	0	0	0
	3-19	29-44	---	6.6-7.8	0	0	0	0
	19-30	29-44	---	6.1-7.8	0	0-2	0	0-3
	30-60	---	---	---	---	---	---	---
Xema-----------------	0-4	6.0-12	---	6.1-7.8	0	0	0	0
	4-18	6.0-11	---	6.1-7.8	0	0	0	0
	18-33	2.0-9.0	---	6.1-7.8	0-3	0	0.0-2.0	0
	33-60	---	---	---	---	---	---	---
296:								
Megonot--------------	0-4	14-24	---	6.6-7.8	0	0	0.0-2.0	0
	4-15	21-40	---	7.4-8.4	1-10	0	0.0-2.0	0
	15-33	21-40	---	7.4-8.4	5-15	0-3	0.0-4.0	0-3
	33-60	---	---	---	---	---	---	---
Yawdim---------------	0-3	23-32	---	6.6-7.8	0-4	0	0.0-2.0	0
	3-16	25-37	---	7.4-8.4	5-15	0-3	0.0-4.0	0-3
	16-60	---	---	---	---	---	---	---
297:								
Muleherder, wooded---	0-1	---	---	5.1-6.5	---	---	---	---
	1-3	7.0-17	---	6.6-7.8	0	0	0	0
	3-17	6.0-15	---	6.6-8.4	0-5	0	0	0
	17-34	4.0-12	---	6.6-8.4	0-10	0	0.0-2.0	0-3
	34-60	0.0-0.0	---	6.6-7.8	0-5	0	0	0
Ironbutte, wooded----	0-1	---	---	5.1-6.5	---	---	---	---
	1-5	9.0-19	---	6.6-7.8	0	0	0	0
	5-13	5.0-14	---	6.6-8.4	0-3	0	0	0
	13-60	0.0-0.0	---	6.6-7.8	0-1	0	0	0
298:								
Nuncho---------------	0-5	22-27	---	6.6-7.8	0	0	0	0
	5-25	22-27	---	6.6-7.8	0	0	0	0
	25-60	15-20	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
299:								
Oldwolf--------------	0-3	9.0-19	---	6.6-7.3	0	0	0	0
	3-21	13-20	---	6.6-8.4	0	0	0	0
	21-32	7.0-16	---	7.9-8.4	5-15	0	0.0-2.0	0-3
	32-60	---	---	---	---	---	---	---
Fairburn-------------	0-4	9.0-19	---	6.6-8.4	0-5	0	0	0
	4-15	11-19	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	15-60	---	---	---	---	---	---	---
300:								
Oshoto---------------	0-7	12-20	---	6.1-7.8	0	0	0	0
	7-32	15-20	---	6.6-8.4	0	0	0	0
	32-60	15-20	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
300:(cont.)								
Klinedraw------------	0-4	12-20	---	6.6-7.8	0	0	0	0
	4-24	15-20	---	6.6-8.4	0	0	0	0
	24-32	10-16	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
	32-60	---	---	---	---	---	---	---
301:								
Oshoto---------------	0-7	12-20	---	6.1-7.8	0	0	0	0
	7-32	15-20	---	6.6-8.4	0	0	0	0
	32-60	15-20	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Klinedraw------------	0-4	12-20	---	6.6-7.8	0	0	0	0
	4-24	15-20	---	6.6-8.4	0	0	0	0
	24-32	10-16	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
	32-60	---	---	---	---	---	---	---
302:								
Oshoto---------------	0-7	12-20	---	6.1-7.8	0	0	0	0
	7-32	15-20	---	6.6-8.4	0	0	0	0
	32-60	15-20	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Moorhead-------------	0-3	21-31	---	6.6-7.8	0	0	0	0
	3-24	26-37	---	6.6-8.4	0	0	0	0
	24-60	21-34	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
303:								
Oshoto---------------	0-7	12-20	---	6.1-7.8	0	0	0	0
	7-32	15-20	---	6.6-8.4	0	0	0	0
	32-60	15-20	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Ziggy----------------	0-4	12-20	---	6.6-7.8	0-2	0	0	0
	4-17	15-20	---	7.4-8.4	5-10	0	0	0
	17-60	15-20	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
304:								
Parmleed-------------	0-4	7.0-14	---	6.6-7.8	0	0	0.0-2.0	0
	4-17	25-35	---	6.6-7.8	0	0	0.0-2.0	0
	17-30	20-30	---	7.9-9.0	5-15	0-1	0.0-2.0	0-3
	30-60	---	---	---	---	---	---	---
Bidman---------------	0-2	7.0-14	---	6.1-7.3	0	0	0.0-2.0	0
	2-17	18-27	---	6.6-7.8	0	0	0.0-2.0	0
	17-25	18-27	---	7.9-9.0	6-14	0-1	0.0-2.0	0-3
	25-60	15-23	---	7.9-9.0	6-14	0-1	0.0-2.0	0-3
305:								
Pinehill-------------	0-3	21-31	---	6.6-7.8	0	0	0	0
	3-31	26-37	---	7.4-8.4	0	0	0	0
	31-60	21-34	---	7.9-8.4	5-15	0-1	0.0-4.0	0-3
306:								
Pinehill-------------	0-3	21-31	---	6.6-7.8	0	0	0	0
	3-31	26-37	---	7.4-8.4	0	0	0	0
	31-60	21-34	---	7.9-8.4	5-15	0-1	0.0-4.0	0-3
Pylon----------------	0-3	16-24	---	6.6-7.8	0	0	0	0
	3-21	25-41	---	7.4-8.4	0	0	0	0
	21-30	21-34	---	7.9-8.4	5-15	0-2	0.0-2.0	0-3
	30-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
307:								
Pinehill, loam-------	0-6	11-20	---	6.6-7.8	0	0	0	0
	6-24	25-41	---	7.4-8.4	0	0	0	0
	24-60	12-30	---	7.4-8.4	5-15	0-1	0.0-2.0	0-3
Pinehill, clay loam--	0-3	21-31	---	6.6-7.8	0	0	0	0
	3-31	26-37	---	7.4-8.4	0	0	0	0
	31-60	21-34	---	7.9-8.4	5-15	0-1	0.0-4.0	0-3
308:								
Pinehill-------------	0-6	11-20	---	6.6-7.8	0	0	0	0
	6-24	25-41	---	7.4-8.4	0	0	0	0
	24-60	12-30	---	7.4-8.4	5-15	0-1	0.0-2.0	0-3
Pylon----------------	0-5	9.0-19	---	6.6-7.8	0	0	0	0
	5-21	26-39	---	7.4-7.8	0	0	0	0
	21-34	24-37	---	7.4-8.4	5-15	0-1	0.0-2.0	0-3
	34-60	---	---	---	---	---	---	---
309:								
Pitchdraw------------	0-4	6.0-12	---	7.4-7.8	0-4	0	0	0
	4-31	5.0-9.0	---	7.9-8.4	1-5	0	0	0
	31-60	---	---	---	---	---	---	---
Ashollow-------------	0-5	6.0-15	---	7.4-8.4	0-2	0	0	0
	5-60	3.0-10	---	7.4-8.4	1-5	0	0.0-2.0	0
Mittenbutte----------	0-3	7.0-13	---	6.6-8.4	0-3	0	0	0
	3-16	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	16-60	---	---	---	---	---	---	---
310:								
Rockypoint-----------	0-3	9.0-19	---	6.6-8.4	0-5	0	0.0-2.0	0
	3-60	7.0-20	---	7.4-9.0	1-10	0-1	4.0-8.0	0-5
311:								
Rockypoint-----------	0-3	9.0-19	---	6.6-8.4	0-5	0	0.0-2.0	0
	3-60	7.0-20	---	7.4-9.0	1-10	0-1	4.0-8.0	0-5
Boruff---------------	0-2	30-48	---	6.6-8.4	0-3	0	2.0-4.0	0-5
	2-60	25-40	---	7.4-9.0	0-10	0-1	4.0-8.0	5-13
312:								
Rockypoint-----------	0-3	9.0-19	---	6.6-8.4	0-5	0	0.0-2.0	0
	3-60	7.0-20	---	7.4-9.0	1-10	0-1	4.0-8.0	0-5
Sodawells------------	0-5	7.0-12	---	6.6-7.8	0-3	0	0	0
	5-60	6.0-11	---	7.4-8.4	1-5	0	0.0-2.0	0
313:								
Savageton------------	0-6	21-23	---	6.6-8.4	0-5	0	0	0-5
	6-20	19-27	---	7.9-8.4	5-10	0	0.0-2.0	0-10
	20-29	19-27	---	7.9-9.0	5-15	0-1	0.0-2.0	0-5
	29-60	---	---	---	---	---	---	---
Samday---------------	0-2	23-32	---	7.4-8.4	0-5	0	0.0-2.0	0
	2-16	25-37	---	7.9-8.4	5-15	0-1	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
314:								
Savageton------------	0-6	21-23	---	6.6-8.4	0-5	0	0	0-5
	6-20	19-27	---	7.9-8.4	5-10	0	0.0-2.0	0-5
	20-29	19-27	---	7.9-9.0	5-15	0-1	0.0-2.0	0-5
	29-60	---	---	---	---	---	---	---
Silhouette-----------	0-2	19-22	---	6.6-7.8	0-5	0	0	0
	2-28	18-23	---	7.4-8.4	1-8	0	0	0
	28-60	18-23	---	7.4-8.4	5-15	0-1	0.0-2.0	0-3
315:								
Shingle--------------	0-2	9.0-16	---	6.6-8.4	0-5	0	0	0
	2-12	10-18	---	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---
Taluce---------------	0-2	7.0-13	---	6.6-8.4	0-3	0	0	0
	2-18	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	18-60	---	---	---	---	---	---	---
Badland--------------	0-60	---	---	---	---	---	---	---
316:								
Shingle, wooded------	0-1	---	---	5.1-6.5	---	---	---	---
	1-3	9.0-16	---	6.6-8.4	0-5	0	0	0
	3-13	10-18	---	7.9-8.4	5-10	0	0.0-2.0	0-5
	13-60	---	---	---	---	---	---	---
Taluce, wooded-------	0-1	---	---	5.1-6.5	---	---	---	---
	1-3	7.0-13	---	6.6-8.4	0-3	0	0	0
	3-19	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	19-60	---	---	---	---	---	---	---
Badland--------------	0-60	---	---	---	---	---	---	---
317:								
Silhouette-----------	0-2	19-22	---	6.6-7.8	0-5	0	0	0
	2-28	18-23	---	7.4-8.4	1-8	0	0	0
	28-60	18-23	---	7.4-8.4	5-15	0-1	0.0-2.0	0-3
Ulm------------------	0-4	16-24	---	6.6-7.3	0	0	0	0
	4-25	26-37	---	6.6-8.4	0	0	0	0
	25-60	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
318:								
Sodawells------------	0-5	7.0-12	---	6.6-7.8	0-3	0	0	0
	5-60	6.0-11	---	7.4-8.4	1-5	0	0.0-2.0	0
Pathfinder-----------	0-5	5.0-13	---	7.4-8.4	0-3	0	0	0
	5-60	2.0-8.0	---	7.4-8.4	0-5	0	0.0-2.0	0
Boruff---------------	0-2	30-48	---	6.6-8.4	0-3	0	2.0-4.0	0-5
	2-60	25-40	---	7.4-9.0	0-10	0-1	4.0-8.0	5-13
319:								
Spottedhorse---------	0-4	9.0-19	---	6.1-7.8	0	0	0	0
	4-27	18-27	---	6.6-8.4	0	0	0	0
	27-35	15-23	---	7.9-8.4	5-15	0	0.0-2.0	0-3
	35-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
319:(cont.)								
Leiter---------------	0-3	16-24	---	6.6-7.8	0	0	0	0
	3-22	26-37	---	6.6-8.4	0	0	0	0
	22-33	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
	33-60	---	---	---	---	---	---	---
320:								
Stetter--------------	0-3	30-46	---	6.1-7.8	0	0	0.0-2.0	0
	3-60	26-36	---	7.4-8.4	0-3	0-1	4.0-8.0	0-5
321:								
Swanboy--------------	0-4	24-45	---	6.6-8.4	0	0	0.0-2.0	0-5
	4-45	21-40	---	6.6-8.4	0-2	5-10	8.0-16.0	5-13
	45-60	21-40	---	7.4-9.0	0-2	0-3	8.0-16.0	13-25
Cedar Butte----------	0-2	8.0-20	---	6.1-7.8	0	0	0.0-2.0	0-5
	2-14	21-40	---	7.4-8.4	0	0	4.0-8.0	5-13
	14-35	21-40	---	7.4-9.6	1-10	0-5	8.0-16.0	13-20
	35-60	24-45	---	7.9-8.4	1-10	0-5	8.0-16.0	10-20
Slickspots-----------	0-60	20-30	---	8.4-9.6	0-5	0-5	8.0-20.0	15-45
322:								
Toby-----------------	0-7	6.0-12	---	6.6-7.8	0	0	0	0
	7-33	6.0-11	---	6.6-7.8	0	0	0	0
	33-60	2.0-9.0	---	7.4-8.4	1-4	0	0	0
Twilight-------------	0-5	6.0-12	---	6.6-7.8	0	0	0	0
	5-20	6.0-11	---	6.6-7.8	0	0	0	0
	20-29	2.0-9.0	---	7.4-8.4	1-4	0	0	0
	29-60	---	---	---	---	---	---	---
Blacksheep-----------	0-3	5.0-11	---	6.6-8.4	0-4	0	0	0
	3-15	4.0-10	---	7.9-8.4	1-4	0	0	0
	15-60	---	---	---	---	---	---	---
323:								
Ucross---------------	0-5	14-18	---	6.6-8.4	0-5	0	0	0
	5-31	12-18	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	31-60	---	---	---	---	---	---	---
Fairburn-------------	0-4	9.0-19	---	6.6-8.4	0-5	0	0	0
	4-15	11-19	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	15-60	---	---	---	---	---	---	---
324:								
Ucross---------------	0-5	14-18	---	6.6-8.4	0-5	0	0	0
	5-31	12-18	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	31-60	---	---	---	---	---	---	---
Fairburn-------------	0-4	9.0-19	---	6.6-8.4	0-5	0	0	0
	4-15	11-19	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	15-60	---	---	---	---	---	---	---
325:								
Ucross, wooded-------	0-1	---	---	5.1-6.5	---	---	---	---
	1-6	14-18	---	6.6-8.4	0-5	0	0	0
	6-32	12-18	---	7.4-8.4	5-15	0	0.0-2.0	0-3
	32-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
325:(cont.)								
Fairburn, wooded-----	0-1	---	---	5.1-6.5	---	---	---	---
	1-5	9.0-19	---	6.6-8.4	0-5	0	0	0
	5-15	11-19	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	15-60	---	---	---	---	---	---	---
326:								
Ucross, wooded-------	0-1	---	---	5.1-6.5	---	---	---	---
	1-6	14-18	---	6.6-8.4	0-5	0	0	0
	6-32	12-18	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	32-60	---	---	---	---	---	---	---
Iwait, wooded--------	0-1	---	---	5.1-6.5	---	---	---	---
	1-7	9.0-19	---	6.6-8.4	0-5	0	0	0
	7-60	10-18	---	7.9-8.4	5-15	0	0.0-2.0	0-5
Fairburn, wooded-----	0-1	---	---	5.1-6.5	---	---	---	---
	1-5	9.0-19	---	6.6-8.4	0-5	0	0	0
	5-16	11-19	---	7.4-8.4	5-15	0	0.0-2.0	0-5
	16-60	---	---	---	---	---	---	---
327:								
Ulm------------------	0-4	16-24	---	6.6-7.3	0	0	0	0
	4-25	26-37	---	6.6-8.4	0	0	0	0
	25-60	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Bidman---------------	0-3	6.0-16	---	6.6-7.8	0	0	0	0
	3-21	21-40	---	6.6-8.4	0	0	0	0
	21-60	16-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
328:								
Ulm------------------	0-4	16-24	---	6.6-7.3	0	0	0	0
	4-25	26-37	---	6.6-8.4	0	0	0	0
	25-60	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
329:								
Ulm------------------	0-9	16-24	---	6.6-7.3	0	0	0.0-2.0	0
	9-22	26-37	---	6.6-7.8	0	0	0.0-2.0	0
	22-60	14-32	---	7.9-9.0	5-15	0-1	0.0-2.0	0-5
330:								
Ulm------------------	0-4	16-24	---	6.6-7.3	0	0	0	0
	4-25	26-37	---	6.6-8.4	0	0	0	0
	25-60	14-32	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
331:								
Valent---------------	0-3	4.0-8.0	---	6.6-7.3	0	0	0.0-1.0	0
	3-60	2.0-5.0	---	6.6-7.3	0	0	0.0-1.0	0
Duneland-------------	0-60	2.0-5.0	---	6.1-7.3	0	0	0.0-1.0	0
332:								
Vanstel--------------	0-4	12-20	---	6.6-7.8	0	0	0	0
	4-19	15-20	---	6.6-8.4	0	0	0	0
	19-60	10-16	---	7.9-8.4	5-15	0-1	0.0-2.0	0-3
Pinehill-------------	0-4	21-31	---	6.6-7.8	0	0	0	0
	4-23	26-37	---	7.4-8.4	0	0	0	0
	23-60	21-34	---	7.9-8.4	5-15	0-2	0.0-2.0	0-3

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
333:								
Vonalee	0-3	5.0-13	---	6.6-7.8	0	0	0	0
	3-24	6.0-11	---	6.6-7.8	0	0	0	0
	24-60	4.0-10	---	7.4-8.4	1-5	0	0.0-2.0	0
Terro	0-3	5.0-13	---	6.6-7.8	0	0	0	0
	3-16	6.0-11	---	6.6-7.8	0	0	0	0
	16-30	4.0-10	---	7.4-8.4	1-5	0	0.0-2.0	0
	30-60	---	---	---	---	---	---	---
Taluce	0-2	7.0-13	---	6.6-8.4	0-3	0	0	0
	2-18	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	18-60	---	---	---	---	---	---	---
334:								
Vonalf	0-6	5.0-13	---	6.6-7.8	0	0	0	0
	6-34	6.0-11	---	6.6-7.8	0	0	0	0
	34-60	4.0-10	---	7.4-8.4	1-5	0	0.0-2.0	0
Xema	0-4	5.0-13	---	6.6-7.8	0	0	0	0
	4-22	6.0-11	---	6.6-7.8	0	0	0	0
	22-31	4.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	31-60	---	---	---	---	---	---	---
Mittenbutte	0-3	7.0-13	---	6.6-8.4	0-3	0	0	0
	3-16	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	16-60	---	---	---	---	---	---	---
335:								
Wibaux	0-3	9.0-19	---	6.6-7.8	0	0	0	0
	3-14	5.0-14	---	6.6-7.8	0-5	0	0	0
	14-60	0.0-0.0	---	6.6-7.8	0-1	0	0	0
Shingle	0-2	9.0-16	---	6.6-8.4	0-5	0	0	0
	2-12	10-18	---	7.9-8.4	5-10	0	0.0-2.0	0-5
	12-60	---	---	---	---	---	---	---
Taluce	0-2	7.0-13	---	6.6-8.4	0-3	0	0	0
	2-18	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	18-60	---	---	---	---	---	---	---
336:								
Wibaux, wooded	0-1	---	---	5.1-6.5	---	---	---	---
	1-4	9.0-19	---	6.6-7.8	0	0	0	0
	4-15	5.0-14	---	6.6-7.8	0-5	0	0	0
	15-60	0.0-0.0	---	6.6-7.8	0-1	0	0	0
Shingle, wooded	0-1	---	---	5.1-6.5	---	---	---	---
	1-3	9.0-16	---	6.6-8.4	0-5	0	0	0
	3-13	10-18	---	7.9-8.4	5-10	0	0.0-2.0	0-5
	13-60	---	---	---	---	---	---	---
Taluce, wooded	0-1	---	---	5.1-6.5	---	---	---	---
	1-3	7.0-13	---	6.6-8.4	0-3	0	0	0
	3-19	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	19-60	---	---	---	---	---	---	---

Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	Inches	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
337:								
Winler----------------	0-4	35-45	---	6.1-7.8	0-1	0-1	0	0
	4-12	36-56	---	6.1-7.8	0-5	0-1	0	0-5
	12-24	36-56	---	6.1-7.8	0-5	0-1	0.0-2.0	3-10
	24-32	30-52	---	5.6-8.4	0-5	1-5	2.0-4.0	3-10
	32-60	---	---	---	---	---	---	---
Twotop----------------	0-3	35-45	---	6.6-7.8	0	0-1	0	0
	3-14	36-56	---	6.6-7.8	0-5	0-1	0	0-5
	14-27	36-56	---	6.6-8.4	0-5	0-1	0.0-2.0	3-10
	27-60	30-52	---	6.6-8.4	0-5	1-5	2.0-4.0	3-10
338:								
Zigweid---------------	0-4	9.0-19	---	7.4-8.4	0-5	0	0.0-2.0	0
	4-13	11-20	---	7.9-8.4	0-10	0	0.0-2.0	0
	13-60	10-18	---	7.9-9.0	5-15	0	0.0-2.0	0-3
Cambria---------------	0-3	10-20	---	6.6-7.3	0	0	0.0-2.0	0
	3-11	20-25	---	7.4-8.4	0-5	0	0.0-2.0	0
	11-60	15-20	---	7.9-9.0	5-15	0	0.0-2.0	0-3
339:								
Zigweid---------------	0-1	9.0-19	---	7.4-8.4	0-5	0	0.0-2.0	0
	1-11	11-20	---	7.9-8.4	0-10	0	0.0-2.0	0
	11-60	10-18	---	7.9-9.0	5-15	0	0.0-2.0	0-3
Kishona---------------	0-5	15-20	---	7.4-8.4	0-5	0	0.0-2.0	0
	5-60	15-25	---	7.9-9.0	5-15	0	0.0-2.0	0-3
Cambria---------------	0-2	10-20	---	6.6-7.8	0	0	0.0-2.0	0
	2-6	20-25	---	7.4-8.4	0	0	0.0-2.0	0
	6-60	15-20	---	7.9-9.0	5-15	0	0.0-2.0	0-3

Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
103:									
Arwite	---	---	---	---	0	---	Moderate	High	Low
105:									
Arwite	---	---	---	---	0	---	Moderate	High	Low
Elwop	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
106:									
Arwite	---	---	---	---	0	---	Moderate	High	Low
Elwop	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
107:									
Arwite	---	---	---	---	0	---	Moderate	High	Low
Vonalf	---	---	---	---	0	---	Moderate	High	Low
122:									
Cushman	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Cambria	---	---	---	---	0	---	Moderate	High	Low
131:									
Deekay	---	---	---	---	0	---	Moderate	High	Low
132:									
Deekay	---	---	---	---	0	---	Moderate	High	Low
Moorhead	---	---	---	---	0	---	Low	High	Low
133:									
Deekay	---	---	---	---	0	---	Moderate	High	Low
Moorhead	---	---	---	---	0	---	Low	High	Low
134:									
Deekay	---	---	---	---	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
134:(cont.)									
Oldwolf	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
135:									
Deekay	---	---	---	---	0	---	Moderate	High	Low
Oldwolf	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
136:									
Deekay	---	---	---	---	0	---	Moderate	High	Low
Ziggy	---	---	---	---	0	---	Moderate	High	Low
137:									
Echeta	---	---	---	---	0	---	Low	High	Low
138:									
Echeta	---	---	---	---	0	---	Low	High	Low
Cromack	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
144:									
Forkwood	---	---	---	---	0	---	Moderate	High	Low
146:									
Forkwood	---	---	---	---	0	---	Low	High	Low
Cushman	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
147:									
Forkwood	---	---	---	---	0	---	Moderate	High	Low
Cushman	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
148:									
Forkwood	---	---	---	---	0	---	Moderate	High	Low
Ulm	---	---	---	---	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
149:									
Forkwood	---	---	---	---	0	---	Low	High	Low
Ulm	---	---	---	---	0	---	Low	High	Low
151:									
Haverdad	---	---	---	---	0	---	Moderate	High	Low
155:									
Heldt, saline	---	---	---	---	0	---	Low	High	High
Bidman, saline	---	---	---	---	0	---	Low	High	High
162:									
Lismas	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	High
Mittenbutte, cool	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Sabatka	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	High
164:									
Lismas	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	High
Sabatka	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	High
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	0	---	None	---	---
166:									
Jaywest	---	---	---	---	0	---	Low	High	Low
167:									
Jaywest	---	---	---	---	0	---	Low	High	Low
Moorhead	---	---	---	---	0	---	Low	High	Low
168:									
Jaywest	---	---	---	---	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
168:(cont.)									
Spottedhorse	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
170:									
Keeline	---	---	---	---	0	---	Moderate	High	Low
Tullock	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
174:									
Brislawn	Strongly contrasting textural stratification	20-40	---	Noncemented	0	---	Low	High	Low
Rockybutte	Strongly contrasting textural stratification	20-40	---	Noncemented	0	---	Moderate	High	Low
Ironbutte	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	High	Low
176:									
Leiter	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Cromack	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
181:									
Moorhead	---	---	---	---	0	---	Low	High	Low
182:									
Moorhead	---	---	---	---	0	---	Low	High	Low
183:									
Moorhead	---	---	---	---	0	---	Low	High	Low
Leiter	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
184:									
Moorhead	---	---	---	---	0	---	Low	High	Low
Leiter	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
185:									
Moskee	---	---	---	---	0	---	Moderate	High	Low
187:									
Nuncho	---	---	---	---	0	---	Low	High	Low
191:									
Pits	---	---	---	---	0	---	---	---	---
Dumps	---	---	---	---	0	---	---	---	---
192:									
Platmak	---	---	---	---	0	---	Low	High	Low
198:									
Recluse	---	---	---	---	0	---	Moderate	High	Low
203:									
Rockypoint	---	---	---	---	0	---	Moderate	High	Low
Iwait	---	---	---	---	0	---	Moderate	High	Low
204:									
Samday	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Samday, cool	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
206:									
Samday	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
206:(cont.)									
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	0	---	None	---	---
207:									
Cromack	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Fairburn	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Ucross	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
210:									
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Taluce	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
215:									
Theedle	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Kishona	---	---	---	---	0	---	Moderate	High	Low
216:									
Theedle	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Kishona	---	---	---	---	0	---	Moderate	High	Low
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
217:									
Theedle	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
219:									
Torriarents	---	---	---	---	0	---	Moderate	High	Low
Torriorthents	---	---	---	---	0	---	Moderate	High	Low
220:									
Pitchdraw	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Ashollow	---	---	---	---	0	---	Moderate	High	Low
Niobrara	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
221:									
Turnercrest	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Keeline	---	---	---	---	0	---	Moderate	High	Low
Taluce	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
223:									
Ucross	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
224:									
Ucross	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Iwait	---	---	---	---	0	---	Moderate	High	Low
225:									
Ucross	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Iwait	---	---	---	---	0	---	Moderate	High	Low
Fairburn	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
228:									
Ulm	---	---	---	---	0	---	Low	High	Low
Renohill	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
229:									
Ulm	---	---	---	---	0	---	Low	High	Low
Renohill	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
233:									
Ustic Torriorthents, gullied	Bedrock (paralithic)	20-60	---	Weakly cemented	---	---	Moderate	High	Low
234:									
Ustic Torriorthents	Bedrock (paralithic)	20-60	---	Extremely weakly cemented	0	---	Moderate	High	Low
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	0	---	None	---	---
236:									
Vonalee	---	---	---	---	0	---	Moderate	High	Low
Terro	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
238:									
Vonalf	---	---	---	---	0	---	Moderate	High	Low
Xema	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
239:									
Ironbutte	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	High	Low
Fairburn	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
239:(cont.)									
Mittenbutte	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
241:									
Ironbutte	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	High	Low
Ironbutte, thin solum	Strongly contrasting textural stratification	6-10	---	Noncemented	0	---	Low	High	Low
244:									
Muleherder	Strongly contrasting textural stratification	20-40	---	Noncemented	0	---	Low	High	Low
Ironbutte	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	High	Low
248:									
Ziggy	---	---	---	---	0	---	Moderate	High	Low
Iwait	---	---	---	---	0	---	Moderate	High	Low
249:									
Ziggy	---	---	---	---	0	---	Moderate	High	Low
Iwait	---	---	---	---	0	---	Moderate	High	Low
250:									
Ziggy	---	---	---	---	0	---	Moderate	High	Low
Ucross	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Oldwolf	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
251:									
Water	---	---	---	---	0	---	---	---	---
252:									
Absted	Natric	6-24	---	Noncemented	0	---	Low	High	High
Slickspots	Natric	---	---	Noncemented	0	---	Low	High	High
253:									
Absted	Natric	6-24	---	Noncemented	0	---	Low	High	High
Arvada	Natric	4-22	---	Noncemented	0	---	Low	High	High
Slickspots	Natric	---	---	Noncemented	0	---	Low	High	High
254:									
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	0	---	---	---	---
Lismas	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Moderate
255:									
Bidman	---	---	---	---	0	---	Low	High	Low
Parmleed	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
256:									
Bidman	---	---	---	---	0	---	Low	High	Low
Ulm	---	---	---	---	0	---	Low	High	Low
257:									
Bonfri, deep	Bedrock (paralithic)	50-60	---	Extremely weakly cemented	0	---	Moderate	High	Low
Bonfri	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
258:									
Bonfri	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
258:(cont.)									
Kirby	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	High	Low
259:									
Bonfri	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Twilight	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Blacksheep	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
260:									
Cabbart, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Volborg, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	High
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	0	---	None	---	---
261:									
Cabbart	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Yawdim	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	0	---	None	---	---
262:									
Cambria	---	---	---	---	0	---	Moderate	High	Low
Kishona	---	---	---	---	0	---	Moderate	High	Low
Zigweid	---	---	---	---	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
263:									
Cedar Butte------------	Natric	1-8	---	Noncemented	0	---	Low	High	High
Slickspots-------------	Natric	---	---	Noncemented	0	---	Low	High	High
264:									
Clarkelen--------------	---	---	---	---	0	---	Moderate	High	Low
Draknab----------------	---	---	---	---	0	---	Low	High	Low
265:									
Clarkelen--------------	---	---	---	---	0	---	Moderate	High	Low
Draknab----------------	---	---	---	---	0	---	Low	High	Low
Boruff-----------------	---	---	---	---	0	---	Low	High	High
266:									
Coaliams, moderately saline----------------	---	---	---	---	0	---	Moderate	High	Moderate
267:									
Cromack----------------	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Samsil-----------------	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Moderate
268:									
Decolney---------------	---	---	---	---	0	---	Moderate	High	Low
Hiland-----------------	---	---	---	---	0	---	Moderate	High	Low
269:									
Decolney---------------	---	---	---	---	0	---	Moderate	High	Low
Hiland-----------------	---	---	---	---	0	---	Moderate	High	Low
270:									
Deekay-----------------	---	---	---	---	0	---	Moderate	High	Low
Deekay, stratified substratum------------	---	---	---	---	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
271:									
Delpoint	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Cabbart	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
272:									
Delpoint	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Yamacall	---	---	---	---	0	---	Moderate	High	Low
Cabbart	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
273:									
Delpoint, wooded	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Yamacall, wooded	---	---	---	---	0	---	Moderate	High	Low
Cabbart, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
274:									
Denied access	---	---	---	---	0	---	---	---	---
275:									
Echeta	---	---	---	---	0	---	Low	High	Moderate
Moorhead	---	---	---	---	0	---	Low	High	Low
276:									
Elwop, wooded	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Mittenbutte, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	---	---	---

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
277:									
Fairburn	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Mittenbutte	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	0	---	---	---	---
278:									
Fairburn	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Samsil	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	High
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	0	---	---	---	---
279:									
Fairburn, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
Samsil, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Moderate
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	0	---	---	---	---
280:									
Felix	---	---	---	---	0	---	Low	High	High
281:									
Foreleft	---	---	---	---	0	---	Moderate	High	Low
282:									
Foreleft	---	---	---	---	0	---	Moderate	High	Low
Bonfri	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
283:									
Gateson, wooded	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Xema, wooded	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Mittenbutte, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
284:									
Haverdad	---	---	---	---	0	---	Moderate	High	Low
285:									
Haverdad	---	---	---	---	0	---	Moderate	High	Low
Boruff	---	---	---	---	0	---	Low	High	Moderate
286:									
Havre	---	---	---	---	0	---	Moderate	High	Moderate
Bigsandy	---	---	---	---	0	---	High	High	Moderate
287:									
Hiland	---	---	---	---	---	---	Low	High	Low
Bowbac	Bedrock (paralithic)	20-40	---	Weakly cemented	---	---	Low	High	Low
288:									
Hiland	---	---	---	---	0	---	Moderate	High	Low
Bowbac	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
289:									
Hiland	---	---	---	---	0	---	Moderate	High	Low
Bowbac	Bedrock (paralithic)	20-40	---	Noncemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
290:									
Hiland	---	---	---	---	0	---	Low	High	Low
Decolney	---	---	---	---	0	---	Low	High	Low
291:									
Ironbutte, wooded	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	Moderate	Low
Fairburn, wooded	Bedrock (paralithic)	10-20	---	---	0	---	Low	High	Low
Mittenbutte, wooded	Bedrock (paralithic)	10-20	---	---	0	---	Low	High	Low
292:									
Jaywest	---	---	---	---	0	---	Low	High	Low
Jaywest, stratified substratum	---	---	---	---	0	---	Low	High	Low
293:									
Jaywest, saline substratum	Natric	9-27	---	Noncemented	0	---	Low	High	High
Cedar Butte	Natric	1-8	---	Noncemented	0	---	Low	High	High
Slickspots	Natric	---	---	Noncemented	0	---	Low	High	High
294:									
Kirby, wooded	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	High	Low
Cabbart, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Blacksheep, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
295:									
Lismas	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Moderate
Sabatka	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Moderate
Xema	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
296:									
Megonot	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Yawdim	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
297:									
Muleherder, wooded	---	---	---	---	0	---	Low	High	Low
Ironbutte, wooded	---	---	---	---	0	---	Low	Moderate	Low
298:									
Nuncho	---	---	---	---	0	---	Low	High	Low
299:									
Oldwolf	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Fairburn	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
300:									
Oshoto	---	---	---	---	0	---	Moderate	High	Low
Klinedraw	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
301:									
Oshoto	---	---	---	---	0	---	Moderate	High	Low
Klinedraw	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
302:									
Oshoto-----------------	---	---	---	---	0	---	Moderate	High	Low
Moorhead---------------	---	---	---	---	0	---	Low	High	Low
303:									
Oshoto-----------------	---	---	---	---	0	---	Moderate	High	Low
Ziggy------------------	---	---	---	---	0	---	Moderate	High	Low
304:									
Parmleed---------------	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Bidman-----------------	---	---	---	---	0	---	Low	High	Low
305:									
Pinehill---------------	---	---	---	---	0	---	Low	High	Low
306:									
Pinehill---------------	---	---	---	---	0	---	Low	High	Low
Pylon------------------	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
307:									
Pinehill, loam---------	---	---	---	---	0	---	Low	High	Low
Pinehill, clay loam----	---	---	---	---	0	---	Low	High	Low
308:									
Pinehill---------------	---	---	---	---	0	---	Low	High	Low
Pylon------------------	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
309:									
Pitchdraw--------------	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Ashollow---------------	---	---	---	---	0	---	Low	High	Low
Mittenbutte------------	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
310:									
Rockypoint	---	---	---	---	0	---	Moderate	High	Low
311:									
Rockypoint	---	---	---	---	0	---	Moderate	High	Low
Boruff	---	---	---	---	0	---	Low	High	High
312:									
Rockypoint	---	---	---	---	0	---	Moderate	High	Low
Sodawells	---	---	---	---	0	---	Moderate	High	Low
313:									
Savageton	Bedrock (paralithic)	---	---	Extremely weakly cemented	0	---	Low	High	Low
Samday	Bedrock (paralithic)	---	---	Extremely weakly cemented	0	---	Low	High	Low
314:									
Savageton	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	0	Low	High	Moderate
Silhouette	---	---	---	---	0	---	Low	High	Low
315:									
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Taluce	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Badland	Bedrock (paralithic)	0-0	---	Extremely weakly cemented	0	---	---	---	---
316:									
Shingle, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Taluce, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Badland	Bedrock (paralithic)	0-0	---	---	0	---	None	---	---

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
317:									
Silhouette	---	---	---	---	0	---	Low	High	Low
Ulm	---	---	---	---	0	---	Low	High	Low
318:									
Sodawells	---	---	---	---	0	---	Moderate	High	Low
Pathfinder	---	---	---	---	0	---	Low	High	Low
Boruff	---	---	---	---	0	---	Low	High	Moderate
319:									
Spottedhorse	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
Leiter	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Low
320:									
Stetter	---	---	---	---	0	---	Low	High	Moderate
321:									
Swanboy	---	---	---	---	0	---	Low	High	Moderate
Cedar Butte	Natric	1-8	---	Noncemented	0	---	Low	High	Moderate
Slickspots	Natric	---	---	Noncemented	0	---	Low	High	High
322:									
Toby	---	---	---	---	0	---	Moderate	High	Low
Twilight	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Blacksheep	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
323:									
Ucross	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Fairburn	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
324:									
Ucross	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Fairburn	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
325:									
Ucross, wooded	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Fairburn, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
326:									
Ucross, wooded	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Iwait, wooded	---	---	---	---	0	---	Moderate	High	Low
Fairburn, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Low	High	Low
327:									
Ulm	---	---	---	---	0	---	Low	High	Low
Bidman	---	---	---	---	0	---	Low	High	Low
328:									
Ulm	---	---	---	---	0	---	Low	High	Low
329:									
Ulm	---	---	---	---	0	---	Low	High	Low
330:									
Ulm	---	---	---	---	0	---	Low	High	Low
331:									
Valent	---	---	---	---	0	---	Low	High	Low
Duneland	---	---	---	---	0	---	Low	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
332:									
Vanstel	---	---	---	---	0	---	Moderate	High	Low
Pinehill	---	---	---	---	0	---	Low	High	Low
333:									
Vonalee	---	---	---	---	0	---	Moderate	High	Low
Terro	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	High	Low
Taluce	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
334:									
Vonalf	---	---	---	---	0	---	Moderate	Moderate	Low
Xema	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Moderate	Moderate	Low
Mittenbutte	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
335:									
Wibaux	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Low	High	Low
Shingle	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Taluce	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
336:									
Wibaux, wooded	Strongly contrasting textural stratification	10-20	---	Noncemented	0	---	Moderate	High	Low

Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
336:(cont.)									
Shingle, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
Taluce, wooded	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	0	---	Moderate	High	Low
337:									
Winler	Bedrock (paralithic)	20-40	---	Extremely weakly cemented	0	---	Low	High	Moderate
Twotop	---	---	---	---	0	---	Low	High	Moderate
338:									
Zigweid	---	---	---	---	0	---	Moderate	High	Low
Cambria	---	---	---	---	0	---	Moderate	High	Low
339:									
Zigweid	---	---	---	---	0	---	Moderate	High	Low
Kishona	---	---	---	---	0	---	Moderate	High	Moderate
Cambria	---	---	---	---	0	---	Moderate	High	Low

Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
103:										
Arwite	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None
105:										
Arwite	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None
Elwop	C	Very low								
			Jan-Dec	---	---	---	---	None	---	None
106:										
Arwite	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Elwop	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
107:										
Arwite	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None
Vonalf	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None
122:										
Cushman	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Cambria	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
131:										
Deekay	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
132:										
Deekay	B	Low								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	*Ft*	*Ft*				
132:(cont.)										
Moorhead	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
133:										
Deekay	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Moorhead	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
134:										
Deekay	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Oldwolf	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
135:										
Deekay	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Oldwolf	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
136:										
Deekay	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Ziggy	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
137:										
Echeta	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
138:										
Echeta	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Cromack	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
144:										
Forkwood------------------	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
146:										
Forkwood------------------	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Cushman-------------------	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
147:										
Forkwood------------------	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Cushman-------------------	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
148:										
Forkwood------------------	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Ulm-----------------------	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
149:										
Forkwood------------------	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Ulm-----------------------	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
151:										
Haverdad------------------	B	Low								
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Occasional
155:										
Heldt, saline-------------	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Bidman, saline------------	C	Low								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
162:										
Lismas	D	High	Jan-Dec	---	---	---	---	None	---	None
Mittenbutte, cool	D	Medium	Jan-Dec	---	---	---	---	None	---	None
Sabatka	D	High	Jan-Dec	---	---	---	---	None	---	None
164:										
Lismas	D	High	Jan-Dec	---	---	---	---	None	---	None
Sabatka	D	High	Jan-Dec	---	---	---	---	None	---	None
Badland	D	---	Jan-Dec	---	---	---	---	None	---	None
166:										
Jaywest	C	Low	Jan-Dec	---	---	---	---	None	---	None
167:										
Jaywest	C	Low	Jan-Dec	---	---	---	---	None	---	None
Moorhead	C	Low	Jan-Dec	---	---	---	---	None	---	None
168:										
Jaywest	C	Low	Jan-Dec	---	---	---	---	None	---	None
Spottedhorse	C	Low	Jan-Dec	---	---	---	---	None	---	None
170:										
Keeline	B	Low	Jan-Dec	---	---	---	---	None	---	None
Tullock	C	Low	Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
174:										
Brislawn	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Rockybutte	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Ironbutte	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
176:										
Leiter	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Cromack	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
181:										
Moorhead	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
182:										
Moorhead	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
183:										
Moorhead	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Leiter	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
184:										
Moorhead	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Leiter	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
185:										
Moskee	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	*Ft*	*Ft*				
187:										
Nuncho	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
191:										
Pits	D	---								
			Jan-Dec	---	---	---	---	None	---	None
Dumps	D	---								
			Jan-Dec	---	---	---	---	None	---	None
192:										
Platmak	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
198:										
Recluse	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
203:										
Rockypoint	B	Low								
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Occasional
Iwait	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
204:										
Samday	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Samday, cool	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Shingle	D	High								
			Jan-Dec	---	---	---	---	None	---	None
206:										
Samday	D	High								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	*Ft*	*Ft*				
206:(cont.)										
Shingle	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	---								
			Jan-Dec	---	---	---	---	None	---	None
207:										
Cromack	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Fairburn	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Ucross	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
210:										
Shingle	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Taluce	D	Low								
			Jan-Dec	---	---	---	---	None	---	None
215:										
Theedle	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Kishona	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
216:										
Theedle	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Kishona	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Shingle	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
217:										
Theedle	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Shingle	D	Medium	Jan-Dec	---	---	---	---	None	---	None
219:										
Torriarents	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Torriorthents	C	Medium	Jan-Dec	---	---	---	---	None	---	None
220:										
Pitchdraw	C	Low	Jan-Dec	---	---	---	---	None	---	None
Ashollow	B	Low	Jan-Dec	---	---	---	---	None	---	None
Niobrara	D	Low	Jan-Dec	---	---	---	---	None	---	None
221:										
Turnercrest	C	Low	Jan-Dec	---	---	---	---	None	---	None
Keeline	B	Low	Jan-Dec	---	---	---	---	None	---	None
Taluce	D	Low	Jan-Dec	---	---	---	---	None	---	None
223:										
Ucross	C	Low	Jan-Dec	---	---	---	---	None	---	None
224:										
Ucross	C	Low	Jan-Dec	---	---	---	---	None	---	None
Iwait	B	Low	Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
225:										
Ucross	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Iwait	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Fairburn	D	Medium	Jan-Dec	---	---	---	---	None	---	None
228:										
Ulm	C	Low	Jan-Dec	---	---	---	---	None	---	None
Renohill	C	Low	Jan-Dec	---	---	---	---	None	---	None
229:										
Ulm	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Renohill	C	Medium	Jan-Dec	---	---	---	---	None	---	None
233:										
Ustic Torriorthents, gullied	C	High	Jan-Dec	---	---	---	---	None	---	None
234:										
Ustic Torriorthents	C	High	Jan-Dec	---	---	---	---	None	---	None
Badland	D	---	Jan-Dec	---	---	---	---	None	---	None
236:										
Vonalee	B	Low	Jan-Dec	---	---	---	---	None	---	None
Terro	C	Low	Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	*Ft*	*Ft*				
238:										
Vonalf	B	Very low	Jan-Dec	---	---	---	---	None	---	None
Xema	C	Low	Jan-Dec	---	---	---	---	None	---	None
239:										
Ironbutte	B	High	Jan-Dec	---	---	---	---	None	---	None
Fairburn	D	High	Jan-Dec	---	---	---	---	None	---	None
Mittenbutte	D	High	Jan-Dec	---	---	---	---	None	---	None
241:										
Ironbutte	B	High	Jan-Dec	---	---	---	---	None	---	None
Ironbutte, thin solum	B	High	Jan-Dec	---	---	---	---	None	---	None
244:										
Muleherder	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Ironbutte	B	High	Jan-Dec	---	---	---	---	None	---	None
248:										
Ziggy	B	Low	Jan-Dec	---	---	---	---	None	---	None
Iwait	B	Low	Jan-Dec	---	---	---	---	None	---	None
249:										
Ziggy	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Iwait	B	Medium	Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
250:										
Ziggy	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Ucross	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Oldwolf	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
251:										
Water	---	---								
			Jan-Dec	---	---	---	---	None	---	None
252:										
Absted	D	Low								
			Jan-Dec	---	---	---	---	None	---	None
Slickspots	D	Negligible								
			Jan-Dec	---	---	---	---	None	---	None
253:										
Absted	D	Low								
			Jan-Dec	---	---	---	---	None	---	None
Arvada	D	Low								
			Jan-Dec	---	---	---	---	None	---	None
Slickspots	D	Negligible								
			Jan-Dec	---	---	---	---	None	---	None
254:										
Badland	D	---								
			Jan-Dec	---	---	---	---	None	---	None
Lismas	D	High								
			Jan-Dec	---	---	---	---	None	---	None
255:										
Bidman	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Parmleed	C	Low								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
256:										
Bidman	C	Low	Jan-Dec	---	---	---	---	None	---	None
Ulm	C	Low	Jan-Dec	---	---	---	---	None	---	None
257:										
Bonfri, deep	B	Very low	Jan-Dec	---	---	---	---	None	---	None
Bonfri	C	Very low	Jan-Dec	---	---	---	---	None	---	None
258:										
Bonfri	C	Low	Jan-Dec	---	---	---	---	None	---	None
Kirby	B	Low	Jan-Dec	---	---	---	---	None	---	None
259:										
Bonfri	C	Low	Jan-Dec	---	---	---	---	None	---	None
Twilight	C	Low	Jan-Dec	---	---	---	---	None	---	None
Blacksheep	D	Low	Jan-Dec	---	---	---	---	None	---	None
260:										
Cabbart, wooded	D	High	Jan-Dec	---	---	---	---	None	---	None
Volborg, wooded	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Badland	D	---	Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
261:										
Cabbart	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Yawdim	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	---								
			Jan-Dec	---	---	---	---	None	---	None
262:										
Cambria	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Kishona	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Zigweid	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
263:										
Cedar Butte	D	Low								
			Jan-Dec	---	---	---	---	None	---	None
Slickspots	D	Negligible								
			Jan-Dec	---	---	---	---	None	---	None
264:										
Clarkelen	B	Very low								
			March	---	---	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
Draknab	A	Very low								
			March	---	---	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Very brief	Rare

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
265:										
Clarkelen	B	Very low								
			March	---	---	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
Draknab	A	Very low								
			March	---	---	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
Boruff	D	Medium								
			January	2.5-4.0	>6.0	---	---	None	---	None
			February	2.5-4.0	>6.0	---	---	None	---	None
			March	2.5-4.0	>6.0	---	---	None	Very brief	Occasional
			April	0.0-0.5	>6.0	---	---	None	Very brief	Occasional
			May	0.0-0.5	>6.0	---	---	None	Very brief	Occasional
			June	0.5-1.5	>6.0	---	---	None	Very brief	Rare
			July	1.5-4.0	>6.0	---	---	None	---	None
			August	4.0-5.0	>6.0	---	---	None	---	None
			September	4.0-5.0	>6.0	---	---	None	---	None
			October	3.0-5.0	>6.0	---	---	None	---	None
			November	3.0-5.0	>6.0	---	---	None	---	None
			December	2.5-5.0	>6.0	---	---	None	---	None
266:										
Coaliams, moderately saline	B	Low								
			March	3.0-5.0	>6.0	---	---	None	Very brief	Rare
			April	3.0-5.0	>6.0	---	---	None	Very brief	Rare
			May	3.0-5.0	>6.0	---	---	None	Very brief	Rare
			June	3.0-5.0	>6.0	---	---	None	Very brief	Rare
267:										
Cromack	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Samsil	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
268:										
Decolney	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None
Hiland	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None
269:										
Decolney	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Hiland	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
270:										
Deekay	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Deekay, stratified substratum	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
271:										
Delpoint	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Cabbart	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
272:										
Delpoint	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Yamacall	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Cabbart	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
273:										
Delpoint, wooded	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Yamacall, wooded	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Cabbart, wooded	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
274:										
Denied access	---	---								
			Jan-Dec	---	---	---	---	None	---	None
275:										
Echeta	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Moorhead	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
276:										
Elwop, wooded	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Mittenbutte, wooded	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	---								
			Jan-Dec	---	---	---	---	None	---	None
277:										
Fairburn	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Mittenbutte	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	---								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
278:										
Fairburn	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Samsil	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	---								
			Jan-Dec	---	---	---	---	None	---	None
279:										
Fairburn, wooded	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Samsil, wooded	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	---								
			Jan-Dec	---	---	---	---	None	---	None
280:										
Felix	D	Negligible								
			April	0.0	0.2-1.0	0.2-1.0	Long	Frequent	---	None
			May	0.0	0.2-1.0	0.2-1.0	Long	Frequent	---	None
			June	0.0	0.5-1.5	0.2-1.0	Long	Occasional	---	None
			July	0.0	0.5-1.5	---	---	Rare	---	None
			August	4.0-5.0	>6.0	---	---	None	---	None
			September	4.0-5.0	>6.0	---	---	None	---	None
			October	4.0-5.0	>6.0	---	---	None	---	None
			November	3.0-5.0	>6.0	---	---	None	---	None
			December	3.0-5.0	>6.0	---	---	None	---	None
281:										
Foreleft	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
282:										
Foreleft	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Bonfri	C	Low								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
283:										
Gateson, wooded	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Xema, wooded	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Mittenbutte, wooded	D	Low								
			Jan-Dec	---	---	---	---	None	---	None
284:										
Haverdad	B	Medium								
			March	3.0-5.0	>6.0	---	---	None	Very brief	Rare
			April	3.0-5.0	>6.0	---	---	None	Very brief	Rare
			May	3.0-5.0	>6.0	---	---	None	Very brief	Rare
			June	3.0-5.0	>6.0	---	---	None	Very brief	Rare
285:										
Haverdad	B	Low								
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Occasional
Boruff	D	Medium								
			January	2.5-4.0	>6.0	---	---	None	---	None
			February	2.5-4.0	>6.0	---	---	None	---	None
			March	2.5-4.0	>6.0	---	---	None	Very brief	Occasional
			April	0.0-0.5	>6.0	---	---	None	Very brief	Occasional
			May	0.0-0.5	>6.0	---	---	None	Very brief	Occasional
			June	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
			July	1.5-4.0	>6.0	---	---	None	Very brief	Rare
			August	4.0-5.0	>6.0	---	---	None	---	None
			September	4.0-5.0	>6.0	---	---	None	---	None
			October	3.0-5.0	>6.0	---	---	None	---	None
			November	3.0-5.0	>6.0	---	---	None	---	None
			December	2.5-5.0	>6.0	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
286:										
Havre	B	Low								
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Occasional
Bigsandy	B	Low								
			January	2.5-4.0	>6.0	---	---	None	---	None
			February	2.5-4.0	>6.0	---	---	None	---	None
			March	2.5-4.0	>6.0	---	---	None	Very brief	Occasional
			April	0.0-0.5	>6.0	---	---	None	Very brief	Occasional
			May	0.0-0.5	>6.0	---	---	None	Very brief	Occasional
			June	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
			July	1.5-4.0	>6.0	---	---	None	Very brief	Rare
			August	4.0-5.0	>6.0	---	---	None	---	None
			September	4.0-5.0	>6.0	---	---	None	---	None
			October	4.0-5.0	>6.0	---	---	None	---	None
			November	3.0-5.0	>6.0	---	---	None	---	None
			December	3.0-5.0	>6.0	---	---	None	---	None
287:										
Hiland	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Bowbac	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
288:										
Hiland	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None
Bowbac	C	Very low								
			Jan-Dec	---	---	---	---	None	---	None
289:										
Hiland	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Bowbac	C	Low								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
290:										
Hiland	B	Low	Jan-Dec	---	---	---	---	None	---	None
Decolney	B	Low	Jan-Dec	---	---	---	---	None	---	None
291:										
Ironbutte, wooded	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Fairburn, wooded	D	High	Jan-Dec	---	---	---	---	None	---	None
Mittenbutte, wooded	D	Medium	Jan-Dec	---	---	---	---	None	---	None
292:										
Jaywest	C	Low	Jan-Dec	---	---	---	---	None	---	None
Jaywest, stratified substratum	C	Low	Jan-Dec	---	---	---	---	None	---	None
293:										
Jaywest, saline substratum	D	Low	Jan-Dec	---	---	---	---	None	---	None
Cedar Butte	D	Low	Jan-Dec	---	---	---	---	None	---	None
Slickspots	D	Negligible	Jan-Dec	---	---	---	---	None	---	None
294:										
Kirby, wooded	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Cabbart, wooded	D	High	Jan-Dec	---	---	---	---	None	---	None
Blacksheep, wooded	D	Medium	Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
295:										
Lismas	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Sabatka	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Xema	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
296:										
Megonot	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Yawdim	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
297:										
Muleherder, wooded	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Ironbutte, wooded	B	High								
			Jan-Dec	---	---	---	---	None	---	None
298:										
Nuncho	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
299:										
Oldwolf	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Fairburn	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
300:										
Oshoto	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Klinedraw	C	Low								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
301:										
Oshoto	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Klinedraw	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
302:										
Oshoto	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Moorhead	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
303:										
Oshoto	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Ziggy	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
304:										
Parmleed	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Bidman	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
305:										
Pinehill	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
306:										
Pinehill	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Pylon	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	*Ft*	*Ft*				
307:										
Pinehill, loam	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Pinehill, clay loam	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
308:										
Pinehill	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Pylon	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
309:										
Pitchdraw	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Ashollow	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Mittenbutte	D	Low								
			Jan-Dec	---	---	---	---	None	---	None
310:										
Rockypoint	B	Low								
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Occasional
311:										
Rockypoint	B	Low								
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Occasional

Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
311:(cont.)										
Boruff	D	Medium								
			January	2.5-4.0	>6.0	---	---	None	---	None
			February	2.5-4.0	>6.0	---	---	None	---	None
			March	2.5-4.0	>6.0	---	---	None	Very brief	Occasional
			April	0.0-0.5	>6.0	---	---	None	Very brief	Occasional
			May	0.0-0.5	>6.0	---	---	None	Very brief	Occasional
			June	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
			July	1.5-4.0	>6.0	---	---	None	Very brief	Rare
			August	4.0-5.0	>6.0	---	---	None	---	None
			September	4.0-5.0	>6.0	---	---	None	---	None
			October	4.0-5.0	>6.0	---	---	None	---	None
			November	3.0-5.0	>6.0	---	---	None	---	None
			December	3.0-5.0	>6.0	---	---	None	---	None
312:										
Rockypoint	B	Low								
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Occasional
Sodawells	B	Very low								
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Occasional
313:										
Savageton	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Samday	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
314:										
Savageton	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Silhouette	C	High								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
315:										
Shingle	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Taluce	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	---								
			Jan-Dec	---	---	---	---	None	---	None
316:										
Shingle, wooded	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Taluce, wooded	D	Low								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	---								
			Jan-Dec	---	---	---	---	None	---	None
317:										
Silhouette	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Ulm	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
318:										
Sodawells	B	Very low								
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Occasional
Pathfinder	A	Very low								
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Occasional

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
318:(cont.)										
Boruff	D	Medium								
			January	2.5-4.0	>6.0	---	---	None	---	None
			February	2.5-4.0	>6.0	---	---	None	---	None
			March	2.5-4.0	>6.0	---	---	None	Very brief	Occasional
			April	0.0-0.5	>6.0	---	---	None	Very brief	Occasional
			May	0.0-0.5	>6.0	---	---	None	Very brief	Occasional
			June	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
			July	1.5-4.0	>6.0	---	---	None	Very brief	Rare
			August	4.0-5.0	>6.0	---	---	None	---	None
			September	4.0-5.0	>6.0	---	---	None	---	None
			October	4.0-5.0	>6.0	---	---	None	---	None
			November	3.0-5.0	>6.0	---	---	None	---	None
			December	3.0-5.0	>6.0	---	---	None	---	None
319:										
Spottedhorse	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Leiter	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
320:										
Stetter	D	Medium								
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Occasional
321:										
Swanboy	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Cedar Butte	D	Low								
			Jan-Dec	---	---	---	---	None	---	None
Slickspots	D	Negligible								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
322:										
Toby	B	Low	Jan-Dec	---	---	---	---	None	---	None
Twilight	C	Low	Jan-Dec	---	---	---	---	None	---	None
Blacksheep	D	Low	Jan-Dec	---	---	---	---	None	---	None
323:										
Ucross	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Fairburn	D	Medium	Jan-Dec	---	---	---	---	None	---	None
324:										
Ucross	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Fairburn	D	Medium	Jan-Dec	---	---	---	---	None	---	None
325:										
Ucross, wooded	C	High	Jan-Dec	---	---	---	---	None	---	None
Fairburn, wooded	D	High	Jan-Dec	---	---	---	---	None	---	None
326:										
Ucross, wooded	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Iwait, wooded	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Fairburn, wooded	D	Medium	Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	*Ft*	*Ft*				
327:										
Ulm	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Bidman	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
328:										
Ulm	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
329:										
Ulm	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
330:										
Ulm	C	High								
			Jan-Dec	---	---	---	---	None	---	None
331:										
Valent	A	Low								
			Jan-Dec	---	---	---	---	None	---	None
Duneland	A	Low								
			Jan-Dec	---	---	---	---	None	---	None
332:										
Vanstel	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Pinehill	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
333:										
Vonalee	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Terro	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Taluce	D	Low								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

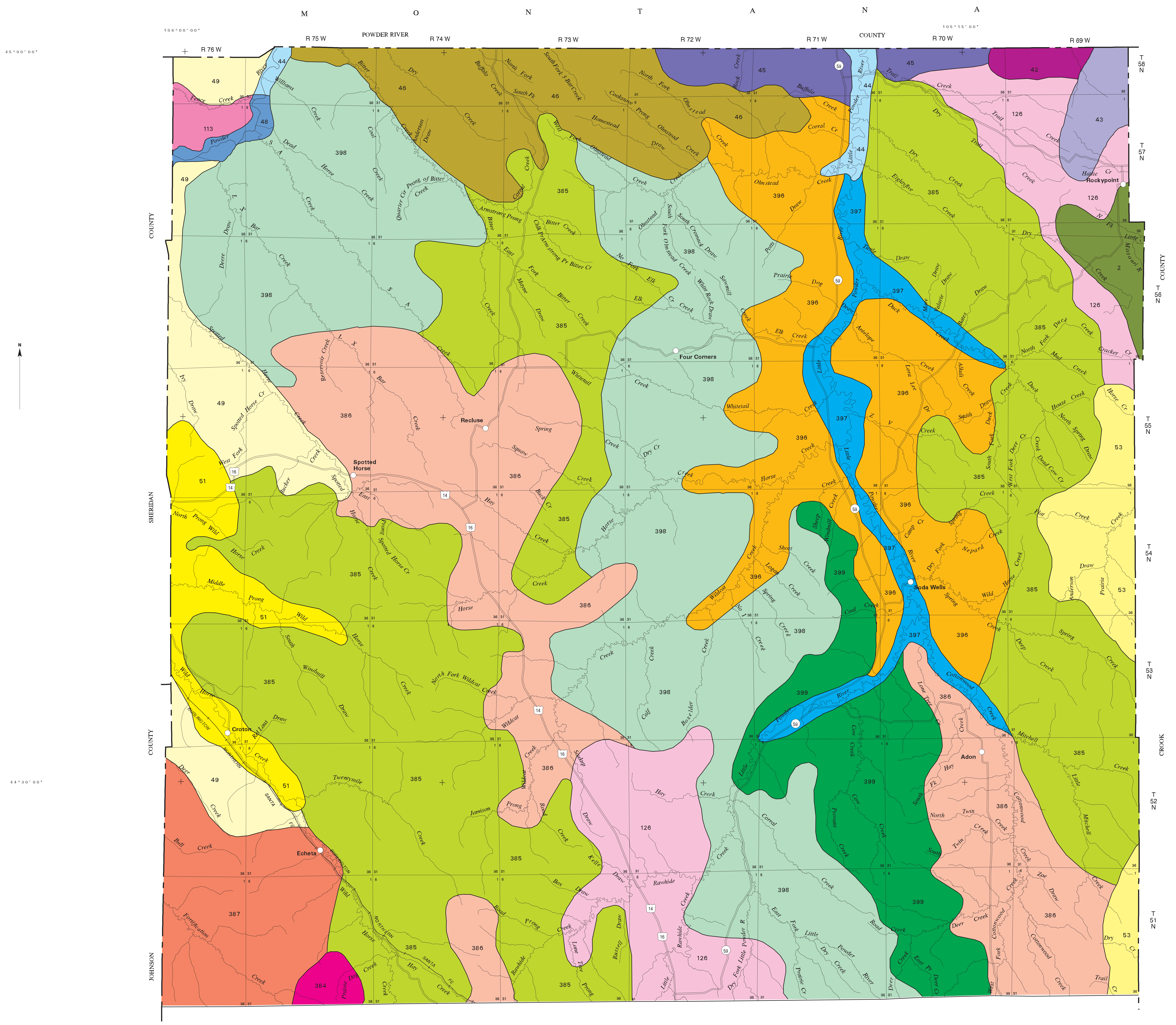
Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
334:										
Vonalf	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Xema	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Mittenbutte	D	Low								
			Jan-Dec	---	---	---	---	None	---	None
335:										
Wibaux	B	High								
			Jan-Dec	---	---	---	---	None	---	None
Shingle	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Taluce	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
336:										
Wibaux, wooded	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Shingle, wooded	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Taluce, wooded	D	Low								
			Jan-Dec	---	---	---	---	None	---	None
337:										
Winler	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Twotop	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
338:										
Zigweid	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Cambria	B	Low								
			Jan-Dec	---	---	---	---	None	---	None

Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
339:										
Zigweid	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Kishona	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Cambria	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None

NRCS Accessibility Statement

The Natural Resources Conservation Service (NRCS) is committed to making its information accessible to all of its customers and employees. If you are experiencing accessibility issues and need assistance, please contact our Helpdesk by phone at 1-800-457-3642 or by e-mail at ServiceDesk-FTC@ftc.usda.gov. For assistance with publications that include maps, graphs, or similar forms of information, you may also wish to contact our State or local office. You can locate the correct office and phone number at http://offices.sc.egov.usda.gov/locator/app.



LEGEND

Soils on the Uplands
Areas of shallow, moderately deep and very deep soils on alluvial fans, fan remnants, hills, plateaus and ridges.

2	Lismas-Winler-Swanboy: Nearly level to steep, shallow to very deep, fine textured soils on alluvial fans, hills, and ridges.
42	Fairburn-Oldwolf-Xema: Gently sloping to steep, shallow to moderately deep, moderately coarse and medium textured soils on hills and ridges.
43	Delpoint-Yamacall-Cabbart: Gently sloping to moderately steep, shallow to very deep, medium textured soils on hills and ridges.
45	Ucross-Fairburn-Jaywest: Nearly level to moderately steep, shallow to very deep, medium and fine textured soils on alluvial fans, fan remnants, hills, and ridges.
46	Cabbart-Kirby-Yawdim: Moderately sloping to very steep, shallow to very deep, coarse, medium, and fine textured soils on hills and ridges.
49	Shingle-Theedle-Bidman: Nearly level to very steep, shallow to very deep, medium and fine textured soils on alluvial fans, fan remnants, hills, and ridges.
51	Bidman-Ulm-Wyarno: Nearly level to strongly sloping, very deep, fine textured soils on alluvial fans, fan remnants, hills, and ridges.
53	Cushman-Forkwood-Shingle: Nearly level to moderately steep, shallow, moderately deep, and very deep, medium textured soils on alluvial fans, fan remnants, hills, and ridges.
113	Shingle-Samday-Badland: Gently sloping to very steep, shallow, medium to fine textured soils and badland on hills and ridges.
126	Arwite-Vonalf-Moorhead: Nearly level to strongly sloping, very deep, moderately coarse, medium, and fine textured soils on alluvial fans, fan remnants, hills, and ridges.
384	Cambria-Theedle-Kishona: Gently sloping to moderately steep, moderately deep and very deep, medium textured soils on alluvial fans, fan remnants, hills, and ridges.
385	Ucross-Deekay-Fairburn: Nearly level to moderately steep, shallow, moderately deep, and very deep, medium textured soils on alluvial fans, fan remnants, hills, and ridges.
386	Deekay-Moorhead-Oldwolf: Nearly level to strongly sloping, moderately deep and very deep, medium and fine textured soils on alluvial fans, fan remnants, hills, and ridges.
387	Theedle-Shingle-Samday: Gently sloping to steep, shallow and moderately deep, medium and fine textured soils on hills and ridges.
396	Deekay-Jaywest-Oldwolf: Nearly level to strongly sloping, moderately deep to very deep, medium to fine textured soils on alluvial fans, fan remnants, hills, and ridges.
398	Ironbutte-Jaywest-Rockybutte: Nearly level to steep, very deep, coarse, medium, and fine textured soils on hills, plateaus, and ridges.
399	Lismas-Sabatka-Ironbutte: Gently sloping to steep, shallow, moderately deep and deep, coarse and fine textured soils on hills and ridges.

Soils in Valleys
Areas of dominantly very deep soils on alluvial fans, fan remnants, flood plains, and stream terraces.

44	Rockypoint-Sodawells-Pathfinder: Nearly level to gently sloping, very deep, well to excessively drained, coarse to medium textured soils on flood plains and stream terraces.
48	Haverdad-Kishona-Draknab: Nearly level to strongly sloping, very deep, well drained, moderately coarse to medium textured soils on alluvial fans, fan remnants, flood plains, and stream terraces.
397	Rockypoint-Iwait-Sodawells: Nearly level to gently sloping, very deep, well drained, moderately coarse to medium textured soils on alluvial fans, fan remnants, flood plains, and stream terraces.

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
FOREST SERVICE
UNITED STATES DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
WYOMING AGRICULTURAL EXPERIMENT STATION

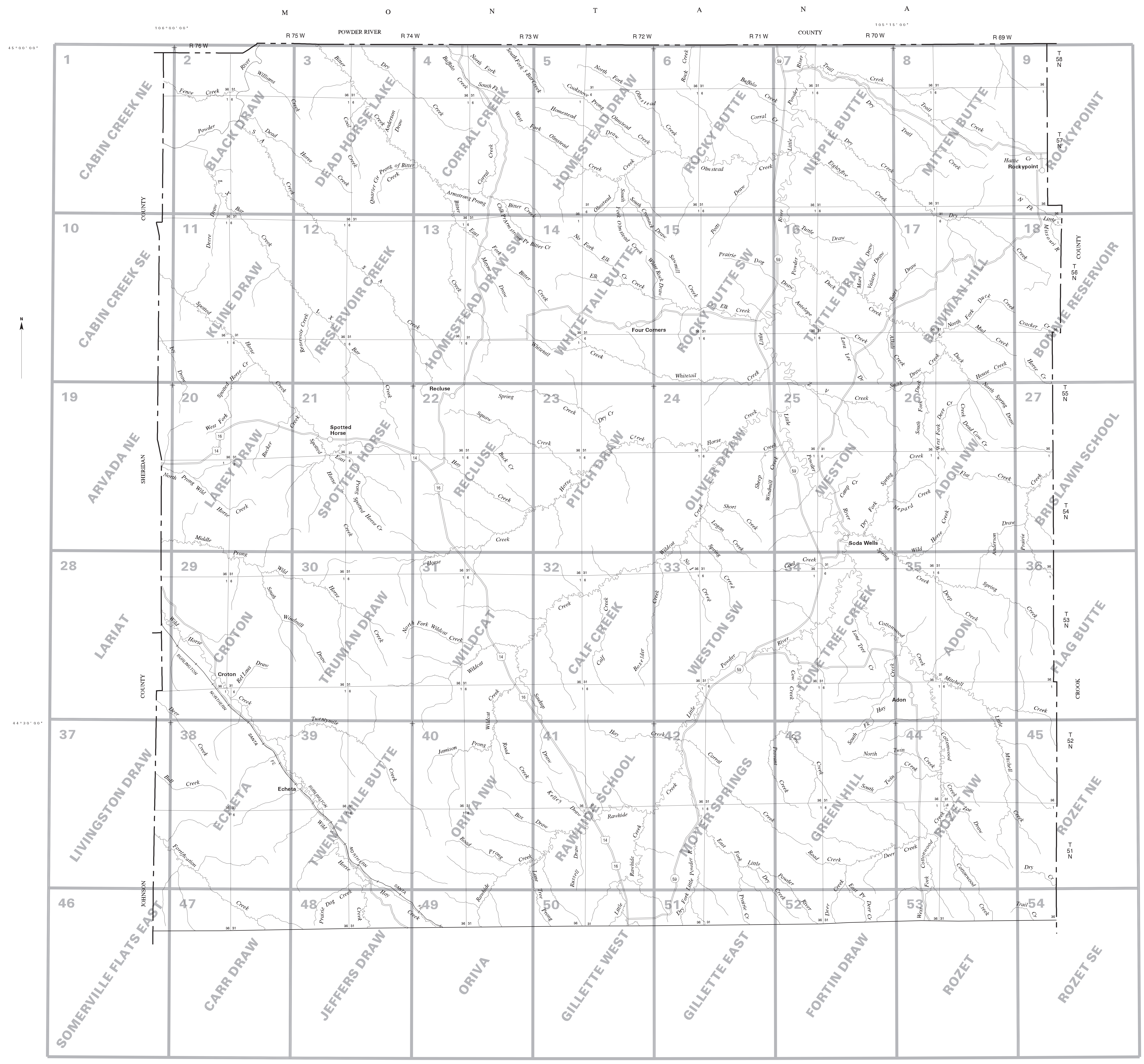
GENERAL SOIL MAP
CAMPBELL COUNTY, WYOMING
NORTHERN PART

1 0 1 2 3
MILES

1 0 1 2 3 4 5 6
KILOMETERS

SCALE = 1:170000

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.


M O N T A N A
POWDER RIVER COUNTY
R 76 W
R 75 W
R 74 W
R 73 W
R 72 W
R 71 W
R 70 W
R 69 W
106°00'00"
105°15'00"
45°00'00"
44°30'00"
T 58 N
T 57 N
T 56 N
T 55 N
T 54 N
T 53 N
T 52 N
T 51 N
SHERIDAN COUNTY
JOHNSON COUNTY
CROOK COUNTY
1 CABIN CREEK NE
2 BLACK DRAW
3 DEAD HORSE LAKE
4 CORRAL CREEK
5 HOMESTEAD DRAW
6 ROCKY BUTTE
7 NIPPLE BUTTE
8 MITTEN BUTTE
9 ROCKYPOINT
10 CABIN CREEK SE
11 KLINE DRAW
12 RESERVOIR CREEK
13 HOMESTEAD DRAW SW
14 WHITETAIL BUTTE
15 ROCKY BUTTE SW
16 TUTTLE DRAW
17 BOWMAN HILL
18 BONE RESERVOIR
19 ARVADA NE
20 LAREY DRAW
21 SPOTTED HORSE
22 RECLUSE
23 PITCH DRAW
24 OLIVER DRAW
25 WESTON
26 ADON NW
27 BRISLAWN SCHOOL
28 LARIAT
29 CROTON
30 TRUMAN DRAW
31 WILDCAT
32 CALF CREEK
33 WESTON SW
34 LONE TREE CREEK
35 ADON
36 FLAG BUTTE
37 LIVINGSTON DRAW
38 ECHETA
39 TWENTYMILE BUTTE
40 ORIVA NW
41 RAWHIDE SCHOOL
42 MOYER SPRINGS
43 GREEN HILL
44 ROZET NW
45 ROZET NE
46 SOMERVILLE FLATS EAST
47 CARR DRAW
48 JEFFERS DRAW
49 ORIVA
50 GILLETTE WEST
51 GILLETTE EAST
52 FORTIN DRAW
53 ROZET
54 ROZET SE
Rockypoint
Four Corners
Recluse
Spotted Horse
Soda Wells
Croton
Adon
Echeta
N

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

INDEX TO MAP SHEETS
CAMPBELL COUNTY, WYOMING
NORTHERN PART

1 0 1 2 3
MILES

1 0 1 2 3 4 5 6
KILOMETERS

SCALE = 1:170000

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE AND FOREST SERVICE

CAMPBELL COUNTY, WYOMING, NORTHERN PART

UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT
UNIVERSITY OF WYOMING, AGRICULTURAL EXPERIMENT STATION

SOIL LEGEND

SYMBOL	NAME
103	Arwite fine sandy loam, 0 to 6 percent slopes
105	Arwite-Elwop fine sandy loams, 0 to 6 percent slopes
106	Arwite-Elwop fine sandy loams, 6 to 15 percent slopes
107	Arwite-Vonalf fine sandy loams, 0 to 6 percent slopes
122	Cushman-Cambria loams, 6 to 15 percent slopes
131	Deekay loam, 0 to 6 percent slopes
132	Deekay-Moorhead loams, 0 to 6 percent slopes
133	Deekay-Moorhead loams, 6 to 15 percent slopes
134	Deekay-Oldwolf loams, 0 to 6 percent slopes
135	Deekay-Oldwolf loams, 6 to 15 percent slopes
136	Deekay-Ziggy loams, 0 to 6 percent slopes
137	Echeta clay loam, 0 to 6 percent slopes
138	Echeta-Cromack clay loams, 6 to 15 percent slopes
144	Forkwood loam, 0 to 6 percent slopes
146	Forkwood-Cushman loams, 0 to 6 percent slopes
147	Forkwood-Cushman loams, 6 to 15 percent slopes
148	Forkwood-Ulm loams, 0 to 6 percent slopes
149	Forkwood-Ulm loams, 6 to 15 percent slopes
151	Haverdad loam, 0 to 3 percent slopes
155	Heldt-Bidman complex, saline, 0 to 3 percent slopes
162	Lismas-Mittenbutte, cool-Sabatka complex, 6 to 40 percent slopes
164	Lismas-Sabatka-Badland complex, 3 to 45 percent slopes
166	Jaywest loam, 0 to 6 percent slopes
167	Jaywest-Moorhead loams, 0 to 6 percent slopes
168	Jaywest-Spottedhorse loams, 0 to 6 percent slopes
170	Keeline-Tullock loamy sands, 6 to 30 percent slopes
174	Brislawn-Rockybutte-Ironbutte complex, 0 to 10 percent slopes
176	Leiter-Cromack clay loams, 3 to 15 percent slopes
181	Moorhead clay loam, 0 to 6 percent slopes
182	Moorhead loam, 0 to 6 percent slopes
183	Moorhead-Leiter clay loams, 0 to 6 percent slopes
184	Moorhead-Leiter clay loams, 6 to 15 percent slopes
185	Moskee fine sandy loam, 0 to 6 percent slopes
187	Nuncho loam, 0 to 6 percent slopes
191	Pits-Dumps complex
192	Platmak loam, 0 to 6 percent slopes
198	Recluse loam, 0 to 6 percent slopes
203	Rockypoint-Iwait association, 0 to 6 percent slopes
204	Samday-Samday,cool-Shingle clay loams, 6 to 40 percent slopes
206	Samday-Shingle-Badland complex, 10 to 45 percent slopes
207	Cromack-Fairburn-Ucross complex, 3 to 20 percent slopes
210	Shingle-Taluce complex, 3 to 30 percent slopes
215	Theedle-Kishona loams, 6 to 20 percent slopes
216	Theedle-Kishona-Shingle loams, 3 to 30 percent slopes
217	Theedle-Shingle loams, 3 to 30 percent slopes
219	Torriarents-Torriorthents complex, reclaimed
220	Pitchdraw-Ashollow-Niobrara complex, 3 to 30 percent slopes
221	Turnercrest-Keeline-Taluce fine sandy loams, 6 to 30 percent slopes
223	Ucross loam, 1 to 9 percent slopes
224	Ucross-Iwait loams, 0 to 6 percent slopes
225	Ucross-Iwait-Fairburn loams, 3 to 30 percent slopes
228	Ulm-Renohill clay loams, 0 to 6 percent slopes
229	Ulm-Renohill clay loams, 6 to 15 percent slopes
233	Ustic Torriorthents, gullied
234	Ustic Torriorthents-Badland complex, 10 to 100 percent slopes
236	Vonalee-Terro fine sandy loams, 2 to 10 percent slopes
238	Vonalf-Xema fine sandy loams, 3 to 10 percent slopes
239	Ironbutte-Fairburn-Mittenbutte complex, 6 to 40 percent slopes
241	Ironbutte-Ironbutte, thin solum channery loams, 6 to 40 percent slopes
244	Muleherder-Ironbutte channery loams, 3 to 40 percent slopes
248	Ziggy-Iwait loams, 0 to 6 percent slopes
249	Ziggy-Iwait loams, 6 to 15 percent slopes
250	Ziggy-Ucross-Oldwolf loams, 3 to 15 percent slopes
251	Water
252	Absted-Slickspots complex, 0 to 6 percent slopes
253	Absted-Arvada-Slickspots complex, 0 to 6 percent slopes
254	Badland-Lismas complex, 15 to 75 percent slopes
255	Bidman-Parmleed loams, 0 to 6 percent slopes
256	Bidman-Ulm complex, 0 to 6 percent slopes
257	Bonfri, deep-Bonfri fine sandy loams, 0 to 6 percent slopes
258	Bonfri-Kirby complex, 0 to 10 percent slopes
259	Bonfri-Twilight-Blacksheep fine sandy loams, wooded, 3 to 30 percent slopes
260	Cabbart-Volborg-Badland complex, wooded, 3 to 60 percent slopes
261	Cabbart-Yawdim-Badland complex, 6 to 45 percent slopes
262	Cambria-Kishona-Zigweid loams, 0 to 6 percent slopes
263	Cedar Butte-Slickspots complex, 0 to 6 percent slopes
264	Clarkelen-Draknab fine sandy loams, 0 to 3 percent slopes
265	Clarkelen-Draknab-Boruff complex, 0 to 6 percent slopes
266	Coaliams fine sandy loam, moderately saline, 0 to 3 percent slopes
267	Cromack-Samsil clay loams, 3 to 15 percent slopes
268	Decolney-Hiland fine sandy loams, 0 to 6 percent slopes
269	Decolney-Hiland fine sandy loams, 6 to 15 percent slopes
270	Deekay-Deekay, stratified substratum loams, 0 to 6 percent slopes
271	Delpoint-Cabbart loams, 6 to 30 percent slopes
272	Delpoint-Yamacall-Cabbart loams, 3 to 30 percent slopes
273	Delpoint-Yamacall-Cabbart loams, wooded, 3 to 30 percent slopes
274	Denied access
275	Echeta-Moorhead clay loams, 0 to 6 percent slopes
276	Elwop-Mittenbutte-Rock outcrop complex, wooded, 3 to 60 percent slopes
277	Fairburn-Mittenbutte-Badland complex, 3 to 60 percent slopes
278	Fairburn-Samsil-Badland complex, 10 to 45 percent slopes
279	Fairburn-Samsil-Badland complex, wooded, 6 to 50 percent slopes
280	Felix clay, 0 to 2 percent slopes
281	Foreleft loam, 0 to 6 percent slopes
282	Foreleft-Bonfri loams, 3 to 15 percent slopes
283	Gateson-Xema-Mittenbutte fine sandy loams, wooded, 3 to 30 percent slopes
284	Haverdad clay loam, 0 to 3 percent slopes
285	Haverdad-Boruff complex, 0 to 3 percent slopes
286	Havre-Bigsandy loams, 0 to 3 percent slopes
287	Hiland-Bowbac association, 3 to 15 percent slopes
288	Hiland-Bowbac fine sandy loams, 0 to 6 percent slopes
289	Hiland-Bowbac fine sandy loams, 6 to 15 percent slopes
290	Hiland-Decolney complex, 3 to 15 percent slopes
291	Ironbutte-Fairburn-Mittenbutte complex, wooded, 3 to 60 percent slopes
292	Jaywest-Jaywest, stratified substratum loams, 0 to 6 percent slopes
293	Jaywest, saline substratum-Cedar Butte-Slickspots complex, 0 to 6 percent slopes
294	Kirby-Cabbart-Blacksheep complex, wooded, 6 to 45 percent slopes
295	Lismas-Sabatka-Xema complex, 3 to 15 percent slopes
296	Megonot-Yawdim clay loams, 3 to 15 percent slopes
297	Muleherder-Ironbutte channery loams, wooded, 10 to 60 percent slopes
298	Nuncho clay loam, 0 to 6 percent slopes
299	Oldwolf-Fairburn loams, 3 to 15 percent slopes
300	Oshoto-Klinedraw silt loams, 0 to 6 percent slopes
301	Oshoto-Klinedraw silt loams, 6 to 15 percent slopes
302	Oshoto-Moorhead complex, 0 to 6 percent slopes
303	Oshoto-Ziggy silt loams, 0 to 6 percent slopes
304	Parmleed-Bidman association, 3 to 15 percent slopes
305	Pinehill clay loam, 0 to 6 percent slopes
306	Pinehill-Pylon clay loams, 3 to 15 percent slopes
307	Pinehill complex, 0 to 6 percent slopes
308	Pinehill-Pylon loams, 3 to 15 percent slopes
309	Pitchdraw-Ashollow-Mittenbutte fine sandy loams, 3 to 20 percent slopes
310	Rockypoint loam, 0 to 3 percent slopes
311	Rockypoint-Boruff complex, 0 to 3 percent slopes
312	Rockypoint-Sodawells complex, 0 to 3 percent slopes
313	Savageton-Samday clay loams, 3 to 15 percent slopes
314	Savageton-Silhouette clay loams, 6 to 15 percent slopes
315	Shingle-Taluce-Badland complex, 6 to 45 percent slopes
316	Shingle-Taluce-Badland complex, wooded, 6 to 45 percent slopes
317	Silhouette-Ulm clay loams, 0 to 6 percent slopes
318	Sodawells-Pathfinder-Boruff complex, 0 to 6 percent slopes
319	Spottedhorse-Lieter complex, 0 to 6 percent slopes
320	Stetter clay, 0 to 3 percent slopes
321	Swanboy-Cedar Butte-Slickspots complex, 0 to 6 percent slopes
322	Toby-Twilight-Blacksheep fine sandy loams, 3 to 30 percent slopes
323	Ucross-Fairburn loams, 3 to 15 percent slopes
324	Ucross-Fairburn loams, 15 to 45 percent slopes
325	Ucross-Fairburn loams, wooded, 10 to 50 percent slopes
326	Ucross-Iwait-Fairburn loams, wooded, 3 to 30 percent slopes
327	Ulm-Bidman complex, 0 to 6 percent slopes
328	Ulm clay loam, 0 to 6 percent slopes
329	Ulm clay loam, 3 to 6 percent slopes
330	Ulm clay loam, 6 to 10 percent slopes
331	Valent-Duneland complex, 3 to 15 percent slopes
332	Vanstel-Pinehill complex, 0 to 6 percent slopes
333	Vonalee-Terro-Taluce fine sandy loams, 3 to 30 percent slopes
334	Vonalf-Xema-Mittenbutte fine sandy loams, 3 to 30 percent slopes
335	Wibaux-Shingle-Taluce complex, 6 to 40 percent slopes
336	Wibaux-Shingle-Taluce complex, wooded, 6 to 40 percent slopes
337	Winler-Twotop clays, 0 to 6 percent slopes
338	Zigweid-Cambria loams, 0 to 6 percent slopes
339	Zigweid-Kishona-Cambria complex, 6 to 15 percent slopes

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES	
National, state, or province	– – ——
County or parish	—— –
Minor civil division	— — — —
Reservation (national forest or park, state forest or park)	—— – ——
Land grant	– – —— – –
Limit of soil survey (label) and/or denied access area	——
Field sheet matchline and neatline	——
Previously Published Survey	—— ——
OTHER BOUNDARY (label)	
Airport, airfield	✈
Cemetery	†
City/county park	
STATE COORDINATE TICK 1 890 000 FEET	┴
LAND DIVISION CORNER (section and land grants)	└ ┴ ┼ ┼
GEOGRAPHIC COORDINATE TICK	+
TRANSPORTATION	
Divided roads	═
Other roads	—
Trail	– – – – –
ROAD EMBLEM AND DESIGNATIONS	
Interstate	173 79/345
Federal	287 410/224
State	52 52/347
County, farm or ranch	1283
RAILROAD	┼──┼
POWER TRANSMISSION LINE	- • - - - • - - - • -
PIPELINE	├─┤├─┤├─┤
FENCE	── × ──
LEVEES	
Without road	
With road	
With railroad	
Single side slope (showing actual feature location)	
DAMS	
Medium or Small	W
LANDFORM FEATURES	
Prominent hill or peak	☼
Soil Sample Site	Ⓢ

MISCELLANEOUS CULTURAL FEATURES	
Farmstead, house	■
Church	✝
School	⚑
Other Religion	▲ Mt Carmel
Located object	⊙ Ranger Station
Tank	● Petroleum
Lookout Tower	
Oil and/or Natural Gas Wells	▲
Windmill	
Lighthouse	

HYDROGRAPHIC FEATURES

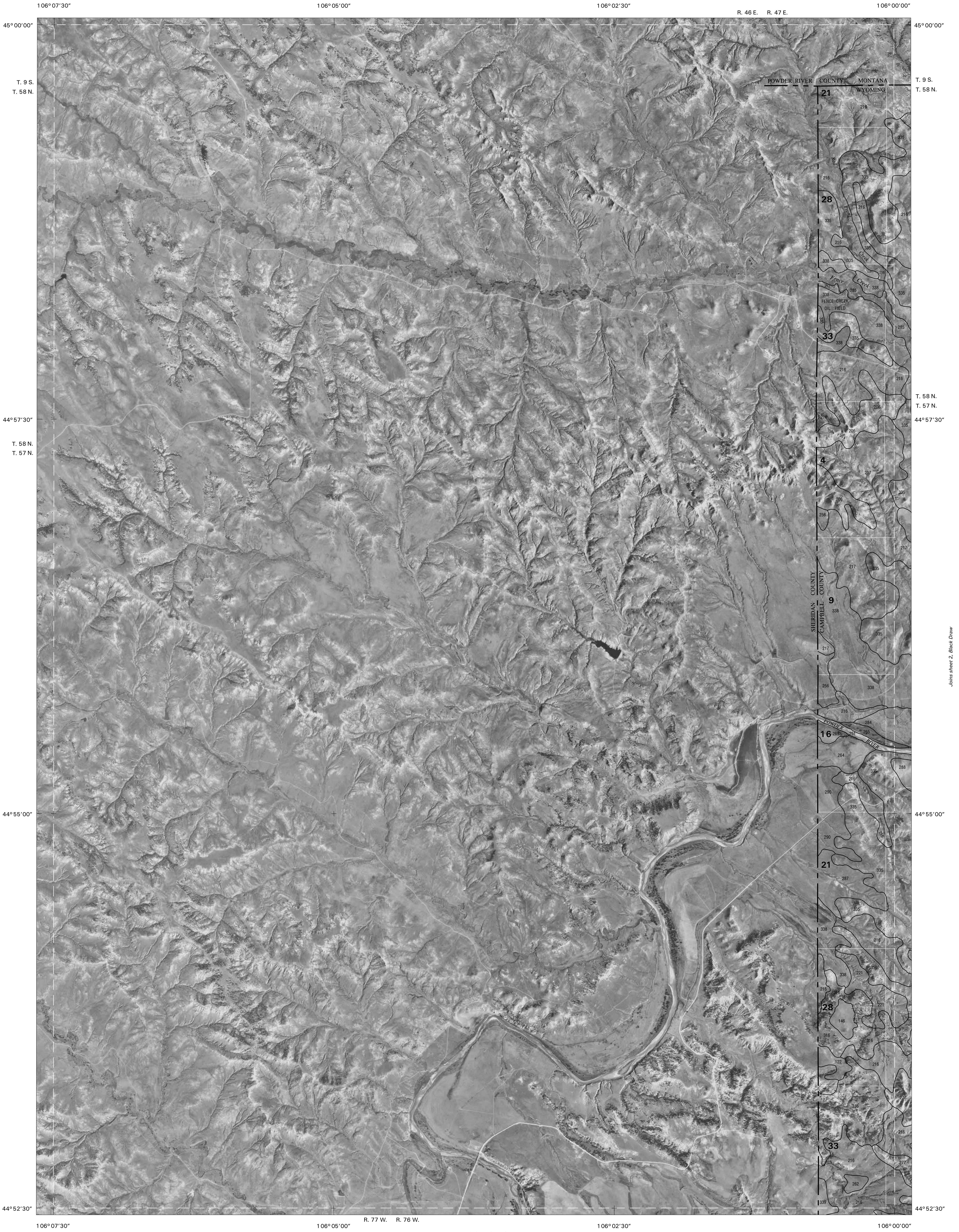
STREAMS	
Perennial stream, double line	═
Perennial stream, single line	Label only
Intermittent stream	Label only
Drainage end	Label only
DRAINAGE AND IRRIGATION	
Double-line canal (label)	CANAL
Perennial drainage and/or irrigation ditch	Label only
Intermittent drainage and/or irrigation ditch	Label only
SMALL LAKES, PONDS AND RESERVOIRS	
Perennial water	◉
Miscellaneous water	◎
Flood pool line	FLOOD POOL LINE
MISCELLANEOUS WATER FEATURES	
Spring	o~
Well, artesian	-●-
Well, irrigation	-o-

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS	103 185
LANDFORM FEATURES	
Bedrock escarpment	VVVVVVVVVV
Other than bedrock escarpment	WWWWWWWWWW
Short steep slope	• • • • • • • • • •
Gully	∿∿∿∿∿∿
Depression, closed	◆
Sinkhole	◇
EXCAVATIONS	
Borrow pits	⊠
Gravel pit	⚒
Mine or quarry	⚒
Landfill	⊚
MISCELLANEOUS SURFACE FEATURES	
Blowout	◡
Clay spot	✕
Gravelly spot	∴
Lava flow	ʌ
Marsh or swamp	⩸
Rock outcrop (includes sandstone and shale)	∨
Saline spot	+
Sandy spot	⁙
Severely eroded spot	≑
Slide or slip	⟩
Sodic spot	∅
Spoil area	≡
Stony spot	0
Very stony spot	00
Wet spot	Ψ

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
CABIN CREEK NE QUADRANGLE
SHEET NUMBER 1 OF 54

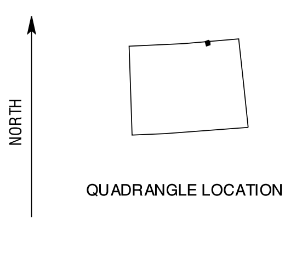


106° 07′30″
106° 05′00″
106° 02′30″
106° 00′00″
45° 00′00″
44° 57′30″
44° 55′00″
44° 52′30″
R. 46 E.
R. 47 E.
R. 77 W.
R. 76 W.
T. 9 S.
T. 58 N.
T. 57 N.
POWDER RIVER COUNTY
MONTANA
WYOMING
SHERIDAN COUNTY
CAMPBELL COUNTY
FENCE CREEK OIL FIELD
Fence Creek
POWDER RIVER
21
28
33
4
9
16
21
28
33
216
335
338
285
217
256
264
288
290
287
221
146
122
262
277
339
Joins sheet 2, Black Draw

Joins sheet 10, Cabin Creek SE

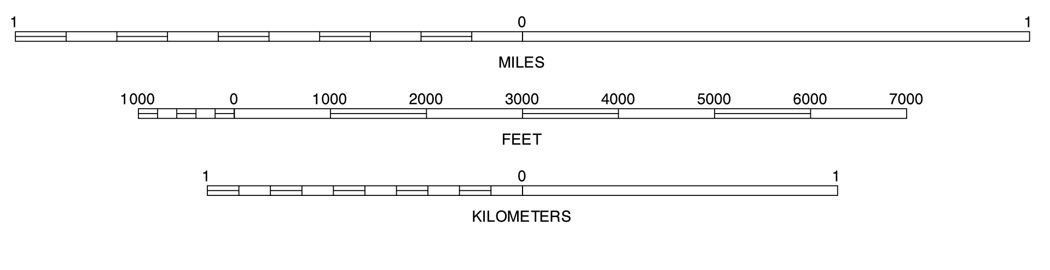
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



NORTH
QUADRANGLE LOCATION

SCALE 1:24000



1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

CABIN CREEK NE, WYOMING

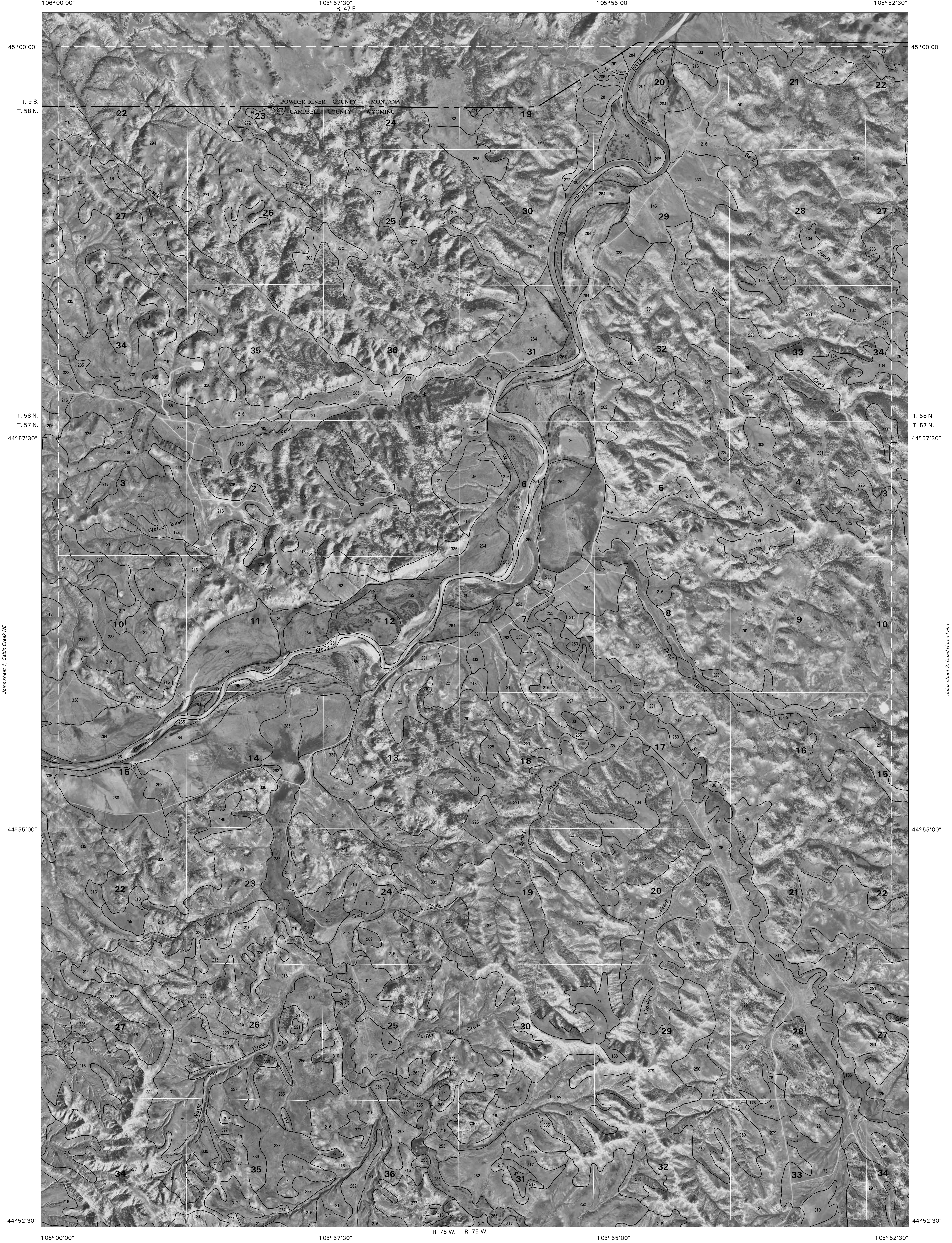
7.5 MINUTE SERIES
SHEET NUMBER 1 OF 54

Joins sheet 11, Kline Draw

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
BLACK DRAW QUADRANGLE (OVERSIZED)
SHEET NUMBER 2 OF 54


106° 00′00″
105° 57′30″
R. 47 E.
105° 55′00″
105° 52′30″
45° 00′00″
T. 9 S.
T. 58 N.
POWDER RIVER COUNTY MONTANA
CAMPBELL COUNTY WYOMING
T. 58 N.
T. 57 N.
44° 57′30″
44° 55′00″
44° 52′30″
R. 76 W.
R. 75 W.
Joins sheet 1, Cabin Creek NE
Joins sheet 3, Dead Horse Lake
Powder River
Watson Basin
Short Creek
Gulch
Dead Horse Creek
Coal Creek
Yerger Draw
Draw
22
23
24
19
20
21
27
26
25
30
29
28
34
35
36
31
32
33
3
2
1
6
5
4
10
11
12
7
8
9
15
14
13
18
17
16

106° 00′00″ 105° 57′30″ R. 76 W. R. 75 W. 105° 55′00″ 105° 52′30″

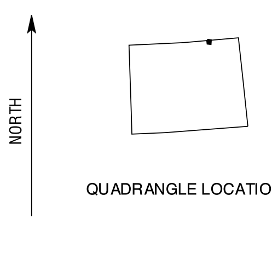
Joins sheet 10, Cabin Creek SE

Joins sheet 11, Kline Draw

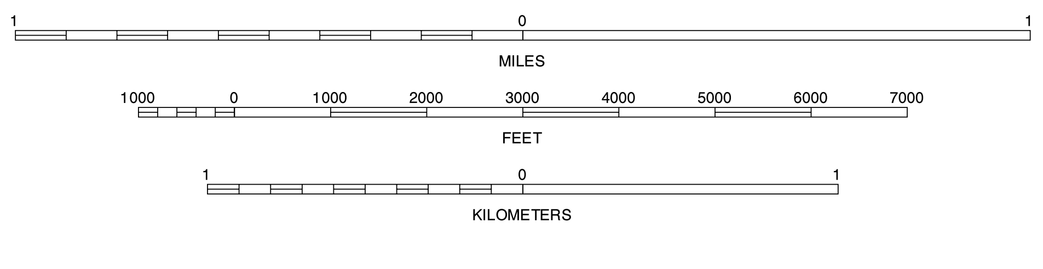
Joins sheet 12, Reservoir Creek

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000

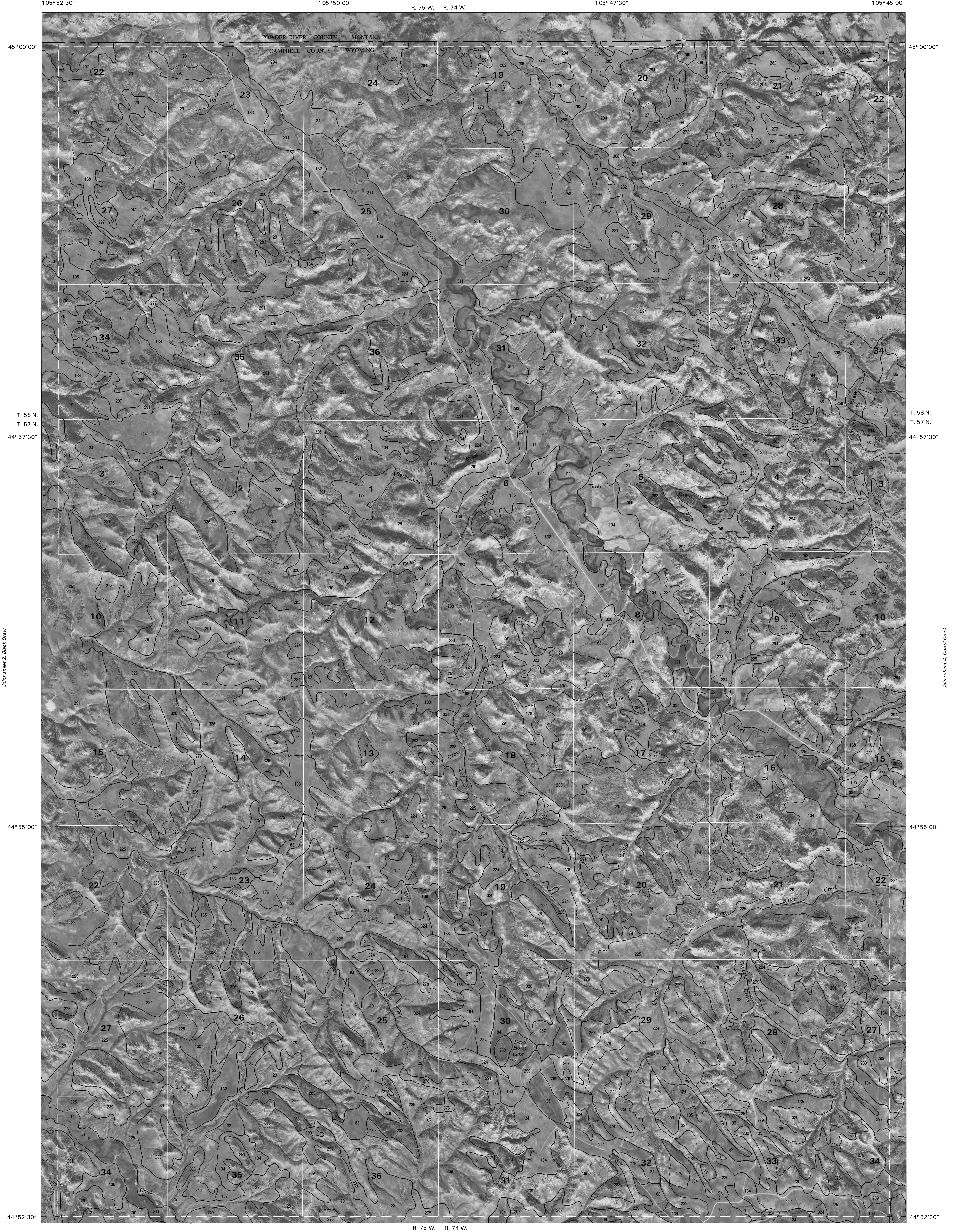

1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

BLACK DRAW, (OVERSIZED) WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 2 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
DEAD HORSE LAKE QUADRANGLE (OVERSIZED)
SHEET NUMBER 3 OF 54

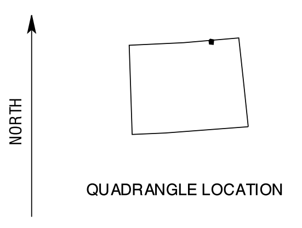

105°52'30"
105°50'00"
R. 75 W.
R. 74 W.
105°47'30"
105°45'00"
45°00'00"
POWDER RIVER COUNTY MONTANA
CAMPBELL COUNTY WYOMING
T. 58 N.
T. 57 N.
44°57'30"
44°55'00"
44°52'30"
Joins sheet 2, Black Draw
Joins sheet 4, Corral Creek
Timber
Dead Horse Lake
Joins sheet 12, Reservoir Creek

Joins sheet 13, Homestead Draw SW

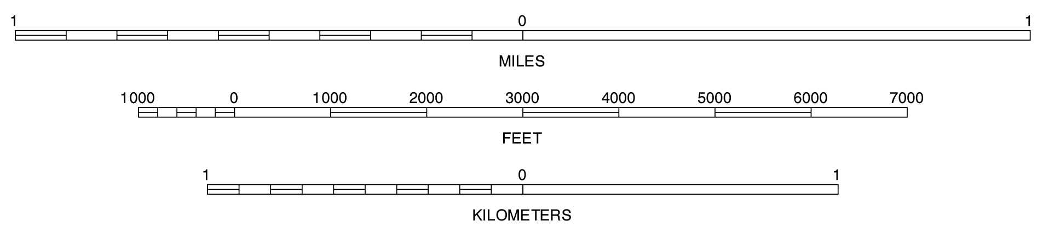
Joins sheet 11, Kline Draw

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000

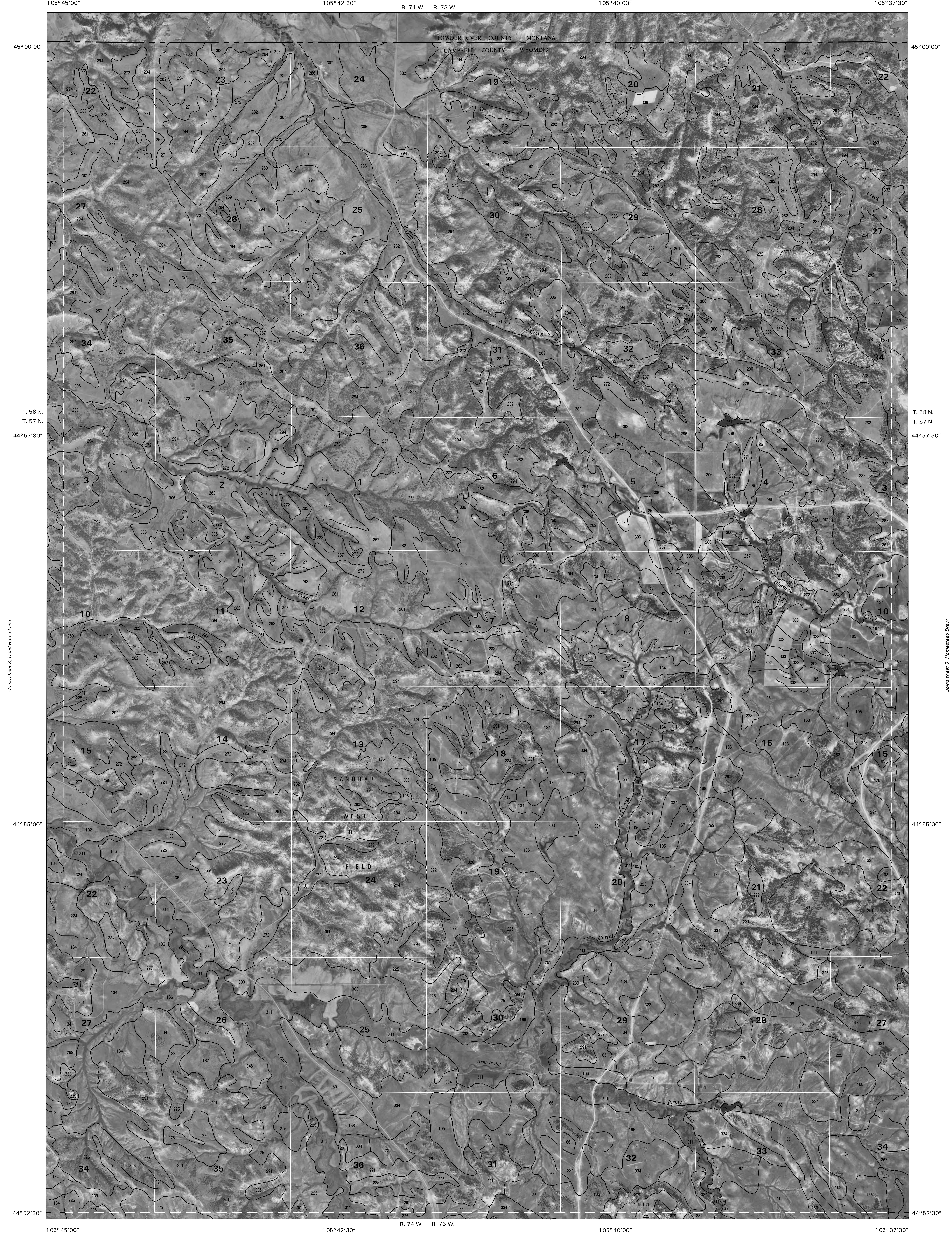

1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

DEAD HORSE LAKE, (OVERSIZED) WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 3 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

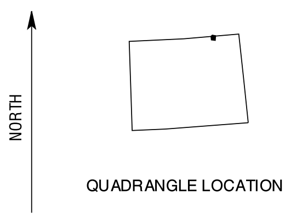
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
CORRAL CREEK QUADRANGLE (OVERSIZED)
SHEET NUMBER 4 OF 54

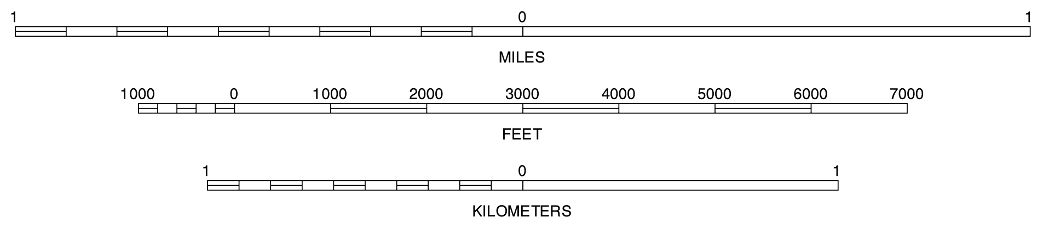

105° 45′00″
105° 42′30″
R. 74 W.
R. 73 W.
105° 40′00″
105° 37′30″
45° 00′00″
POWDER RIVER COUNTY MONTANA
CAMPBELL COUNTY WYOMING
T. 58 N.
T. 57 N.
44° 57′30″
44° 55′00″
44° 52′30″
Joins sheet 3, Dead Horse Lake
Joins sheet 5, Homestead Draw
SANDBAR WEST OIL FIELD
Corral Creek
Armstrong
Prong
Olmstead
Joins sheet 13, Homestead Draw SW
Joins sheet 12, Reservoir Creek
Joins sheet 14, White Tail Butte

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000

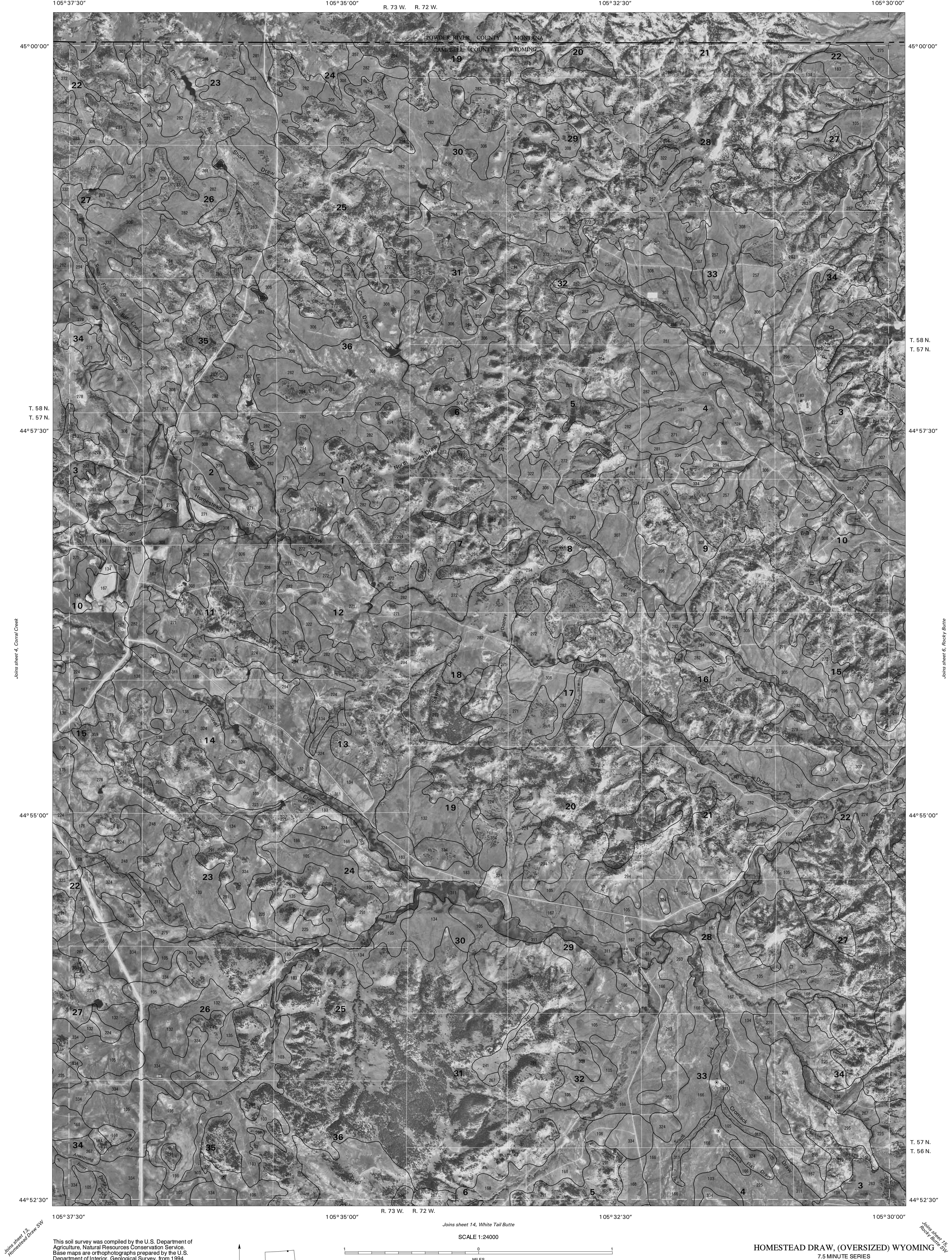

1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

CORRAL CREEK, (OVERSIZED) WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 4 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

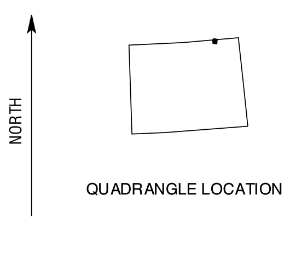
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
HOMESTEAD DRAW QUADRANGLE (OVERSIZED)
SHEET NUMBER 5 OF 54

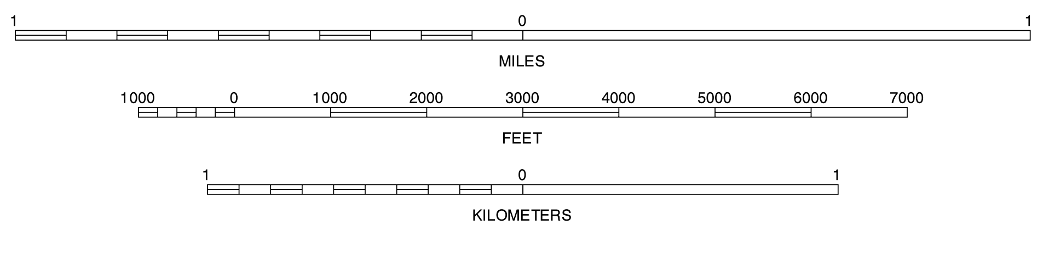

105° 37′30″
105° 35′00″
R. 73 W.
R. 72 W.
105° 32′30″
105° 30′00″
45° 00′00″
POWDER RIVER COUNTY MONTANA
CAMPBELL COUNTY WYOMING
T. 58 N.
T. 57 N.
44° 57′30″
44° 55′00″
T. 56 N.
44° 52′30″
Joins sheet 4, Corral Creek
Joins sheet 6, Rocky Butte
Joins sheet 14, White Tail Butte
Joins sheet 13, Homestead Draw SW
Joins sheet 15, Rocky Butte SW
Short Draw
Coal Gulch
North Fork Olmstead Creek
Homestead Draw
North Side Draw
Olmstead Creek
Bill Draw
Armstrong Bitter Draw Creek
Cactus Flat Draw
Cromack Draw
South Fork

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

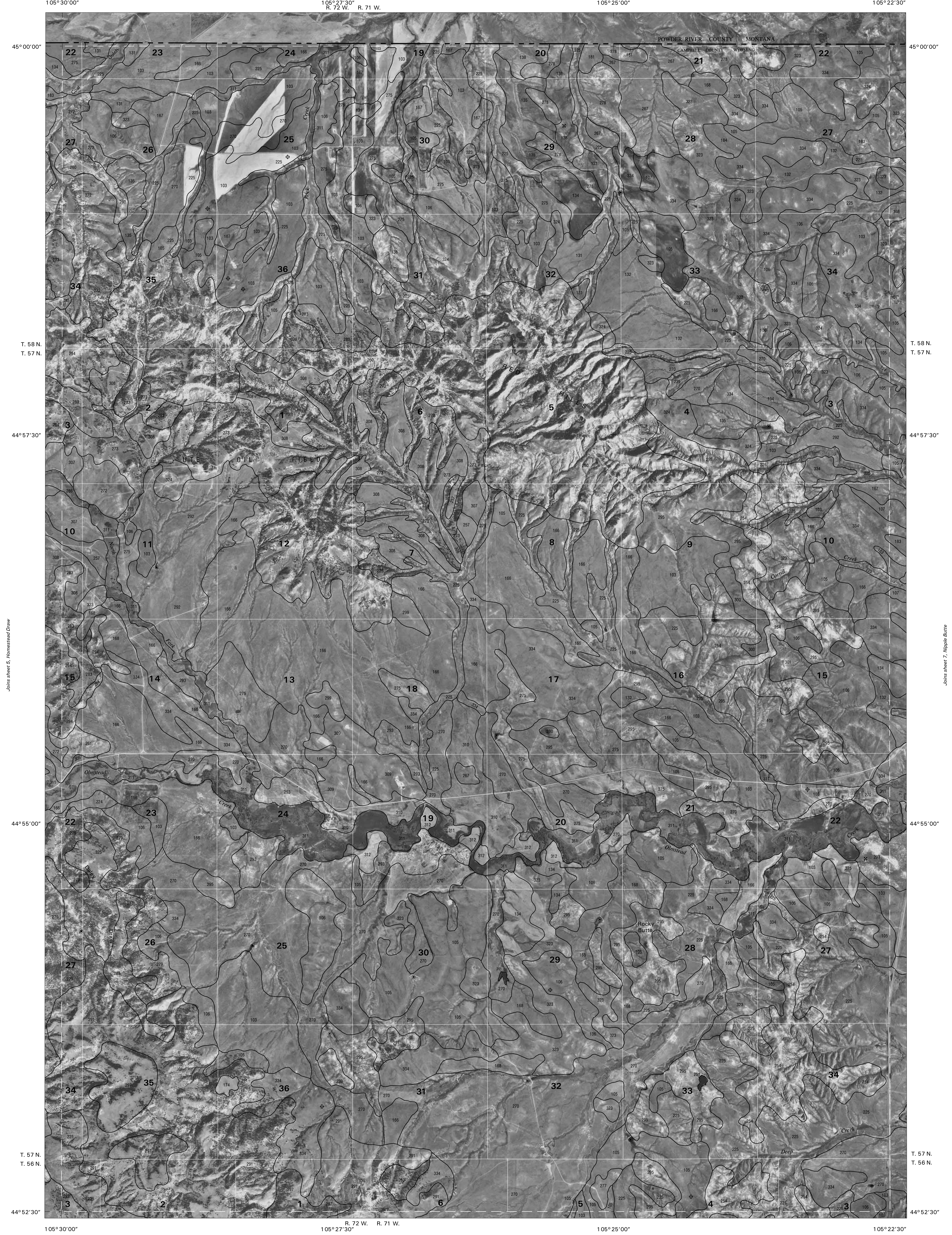
HOMESTEAD DRAW, (OVERSIZED) WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 5 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

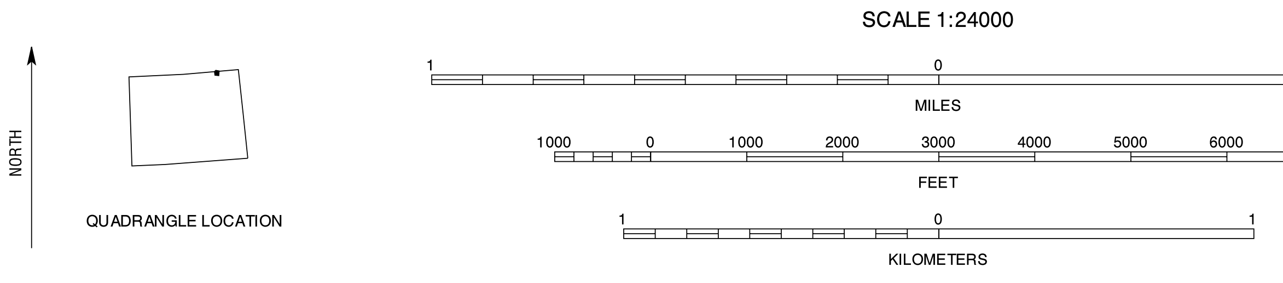
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
ROCKY BUTTE QUADRANGLE (OVERSIZED)
SHEET NUMBER 6 OF 54


105° 30′00″
105° 27′30″
R. 72 W.
R. 71 W.
105° 25′00″
105° 22′30″
45° 00′00″
POWDER RIVER COUNTY MONTANA
CAMPBELL COUNTY WYOMING
T. 58 N.
T. 57 N.
44° 57′30″
44° 55′00″
T. 57 N.
T. 56 N.
44° 52′30″
Joins sheet 5, Homestead Draw
Joins sheet 7, Nipple Butte
Joins sheet 14, White Tail Butte
Joins sheet 15, Rocky Butte SW
Joins sheet 16, Tuttle Draw
Olmstead Creek
Corral Creek
Deep Creek
Rocky Butte
OIL FIELD
RED HILLS

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000
FEET
1 0 1
KILOMETERS

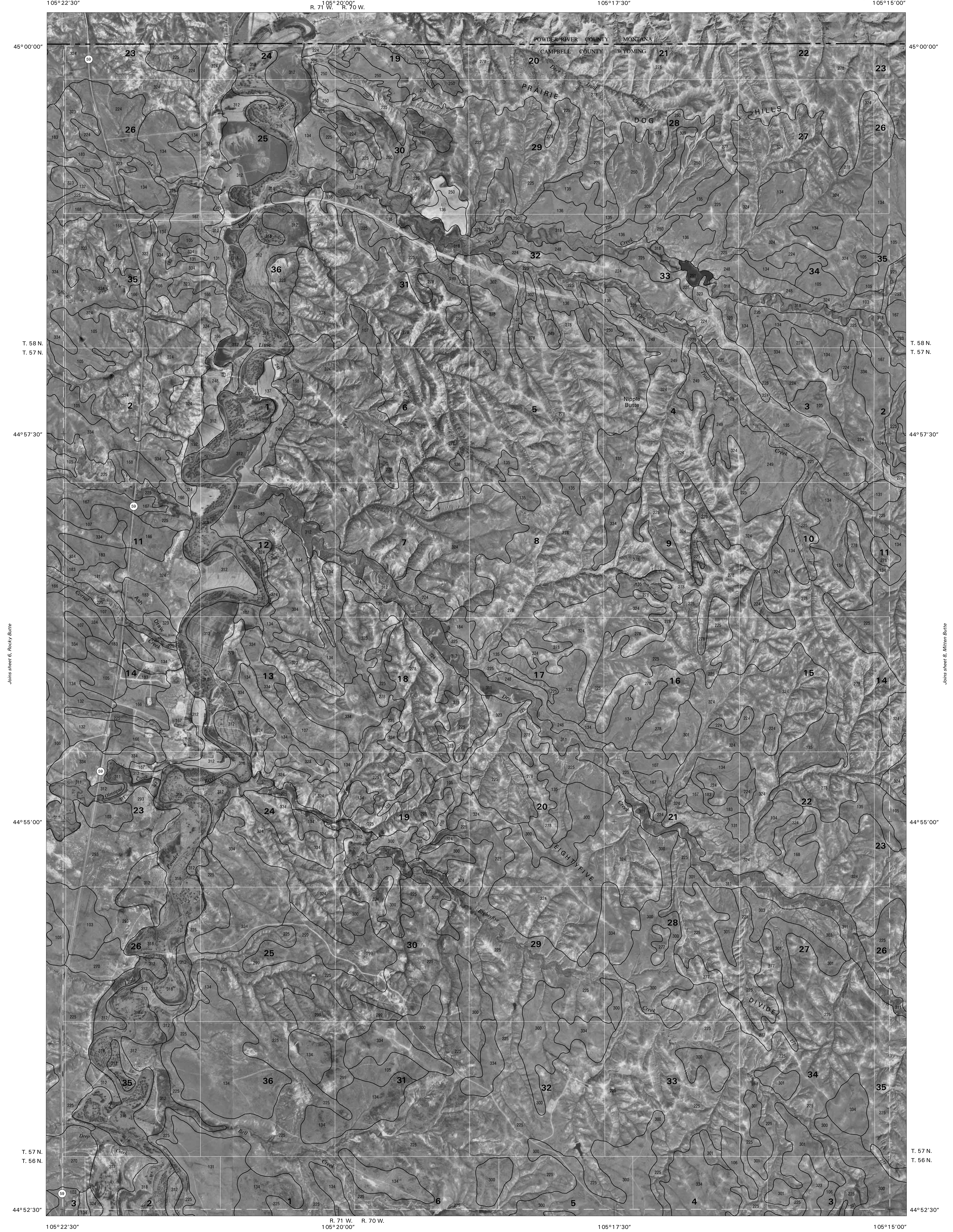
ROCKY BUTTE, (OVERSIZED) WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 6 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

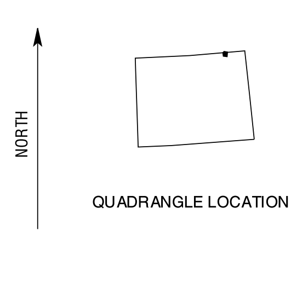
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
NIPPLE BUTTE QUADRANGLE (OVERSIZED)
SHEET NUMBER 7 OF 54


105°22'30"
105°20'00"
R. 71 W.
R. 70 W.
105°17'30"
105°15'00"
45°00'00"
POWDER RIVER COUNTY MONTANA
CAMPBELL COUNTY WYOMING
PRAIRIE DOG HILLS
Nipple Butte
EIGHTYFIVE
DIVIDE
T. 58 N.
T. 57 N.
44°57'30"
44°55'00"
T. 57 N.
T. 56 N.
44°52'30"
Joins sheet 6, Rocky Butte
Joins sheet 8, Mitten Butte
Joins sheet 15, Rocky Butte SW
Joins sheet 16, Tuttle Draw
Joins sheet 17, Bowman Hill

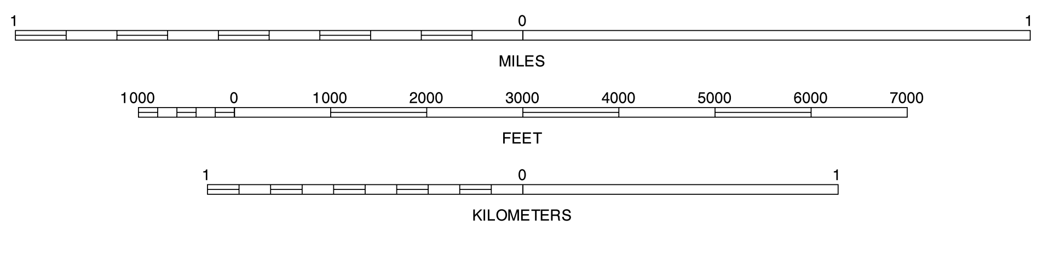
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

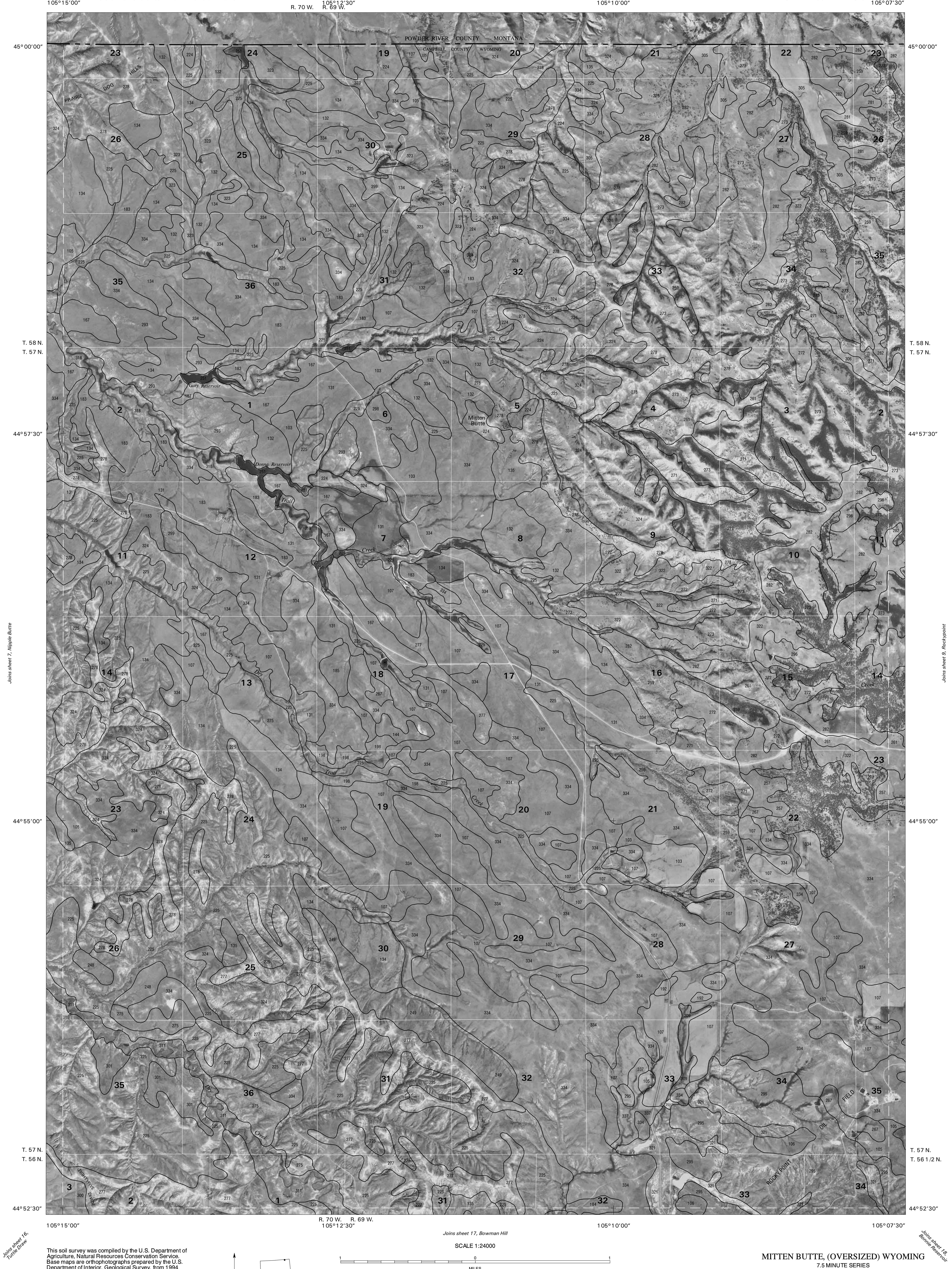
NIPPLE BUTTE, (OVERSIZED) WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 7 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

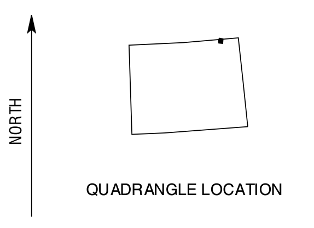
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
MITTEN BUTTE QUADRANGLE (OVERSIZED)
SHEET NUMBER 8 OF 54

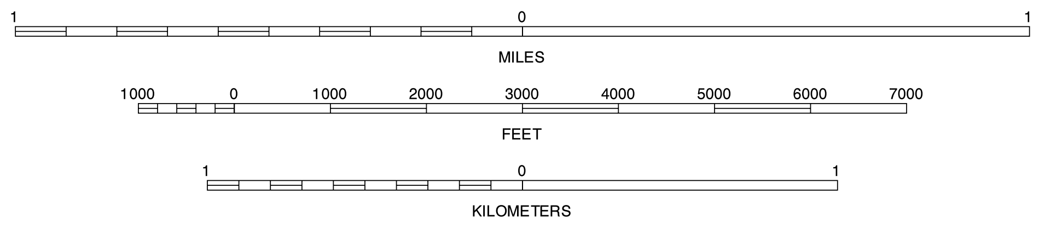

105°15'00"
105°12'30"
105°10'00"
105°07'30"
R. 70 W.
R. 69 W.
45°00'00"
44°57'30"
44°55'00"
44°52'30"
T. 58 N.
T. 57 N.
T. 56 N.
T. 56 1/2 N.
POWDER RIVER COUNTY MONTANA
CAMPBELL COUNTY WYOMING
PRAIRIE DOG HILLS
Gary Reservoir
Donna Reservoir
Mitten Butte
Trail Creek
Dry Creek
Little Creek
EIGHTYFIVE DIVIDE
ROCKY POINT
OIL FIELD
Joins sheet 7, Nipple Butte
Joins sheet 9, Rockypoint
Joins sheet 16, Tuttle Draw
Joins sheet 17, Bowman Hill
Joins sheet 18, Bonnie Reservoir

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000


1 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000
FEET
1 0 1
KILOMETERS

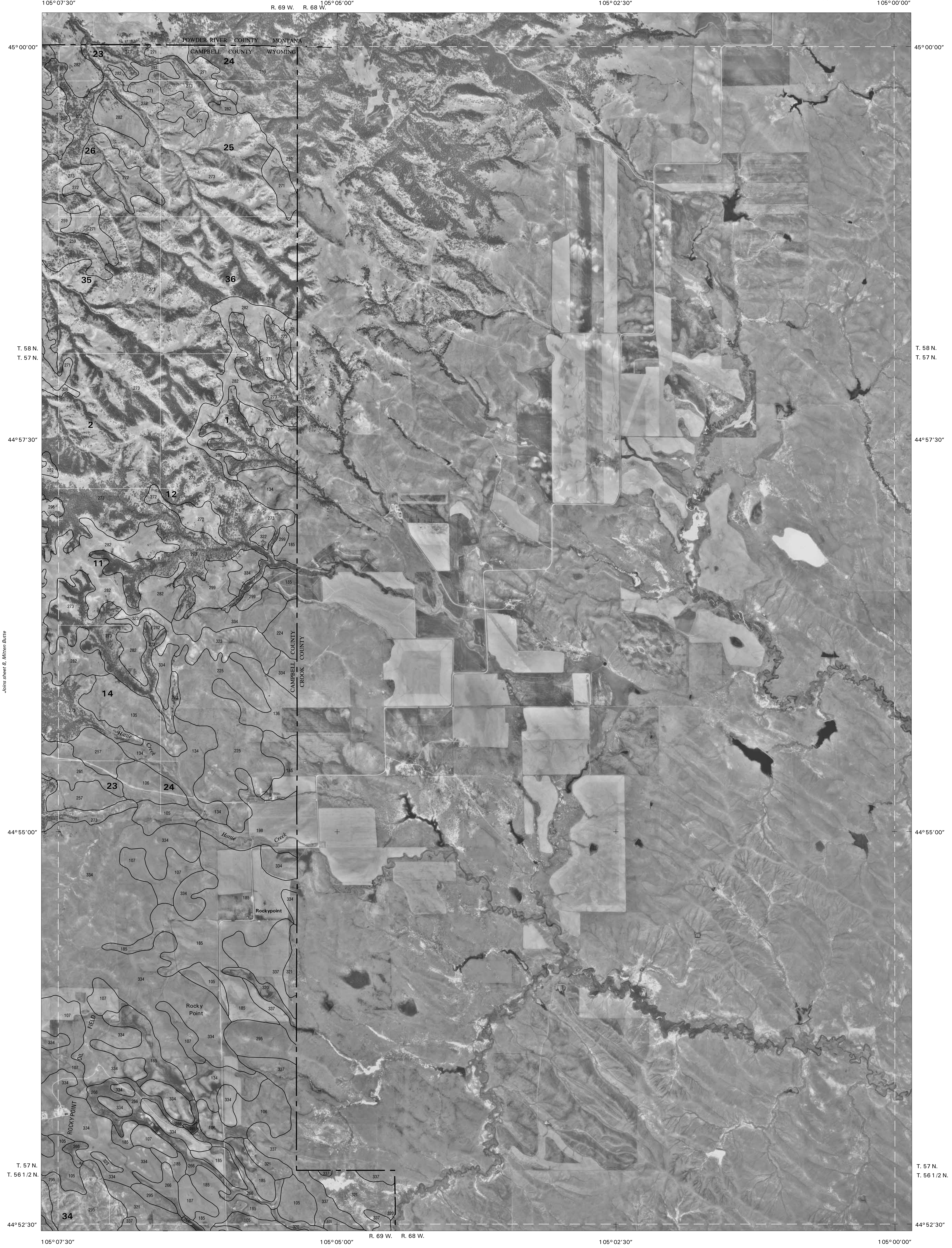
MITTEN BUTTE, (OVERSIZED) WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 8 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

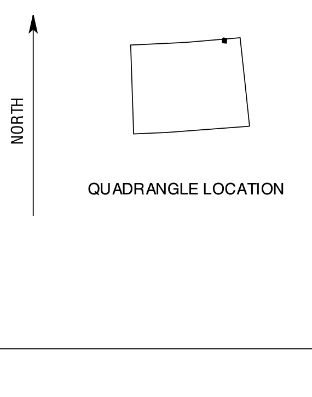
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
ROCKYPOINT QUADRANGLE (OVERSIZED)
SHEET NUMBER 9 OF 54

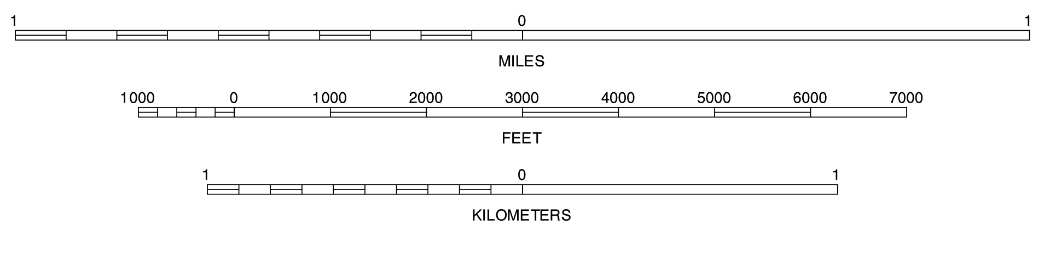

105° 07′30″
R. 69 W.
R. 68 W.
105° 05′00″
105° 02′30″
105° 00′00″
45° 00′00″
POWDER RIVER COUNTY MONTANA
CAMPBELL COUNTY WYOMING
23
24
26
25
35
36
T. 58 N.
T. 57 N.
2
1
44° 57′30″
12
11
Joins sheet 8, Mitten Butte
CAMPBELL COUNTY
CROOK COUNTY
14
Home Creek
23
24
44° 55′00″
Rockypoint
Rocky Point
OIL FIELD
ROCKYPOINT
T. 57 N.
T. 56 1/2 N.
34
44° 52′30″
105° 07′30″
R. 69 W.
R. 68 W.
105° 05′00″
105° 02′30″
105° 00′00″
Joins sheet 18, Bonnie Reservoir
Joins sheet 17, Bowman Hill

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

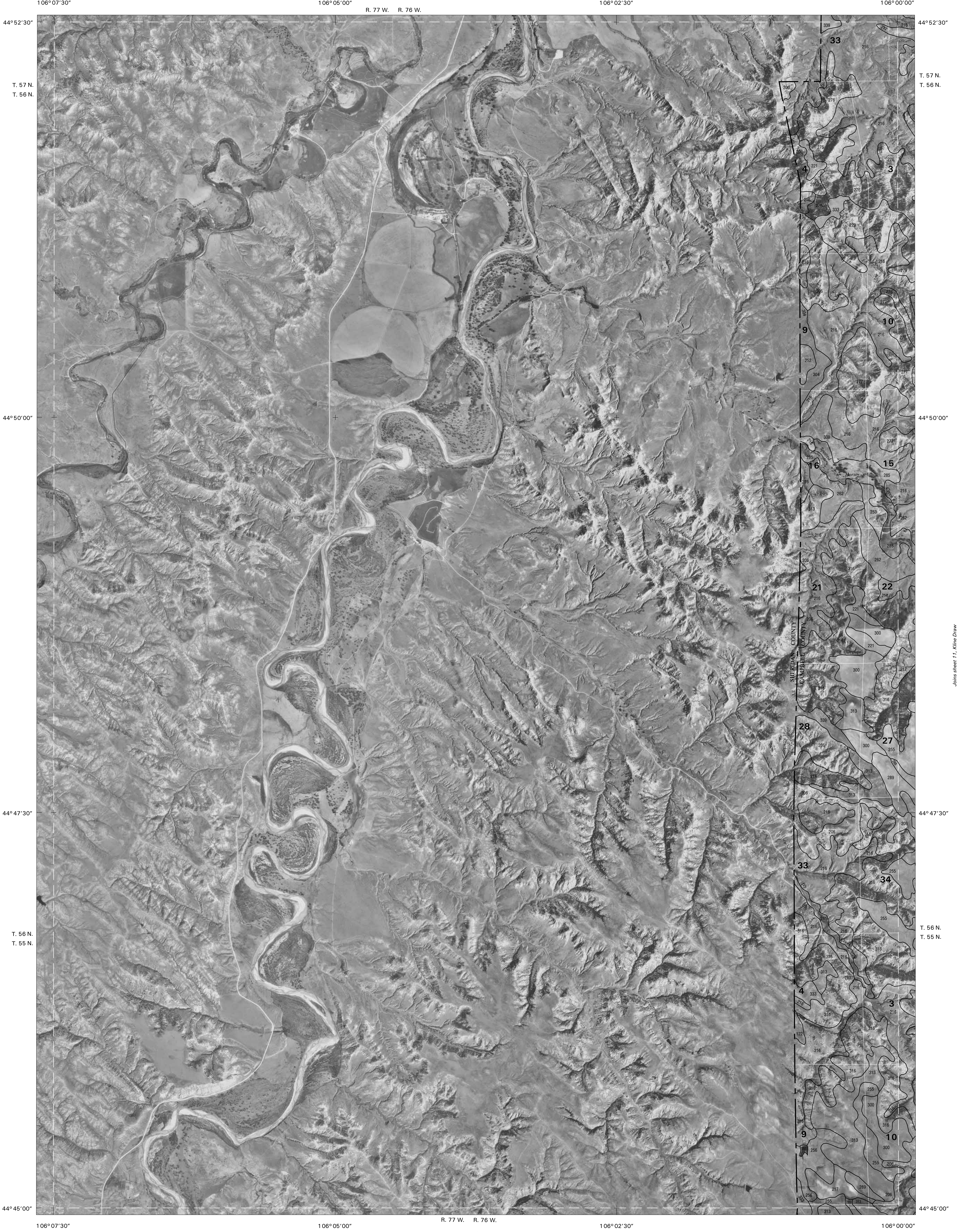
ROCKYPOINT, (OVERSIZED) WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 9 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
CABIN CREEK SE QUADRANGLE
SHEET NUMBER 10 OF 54

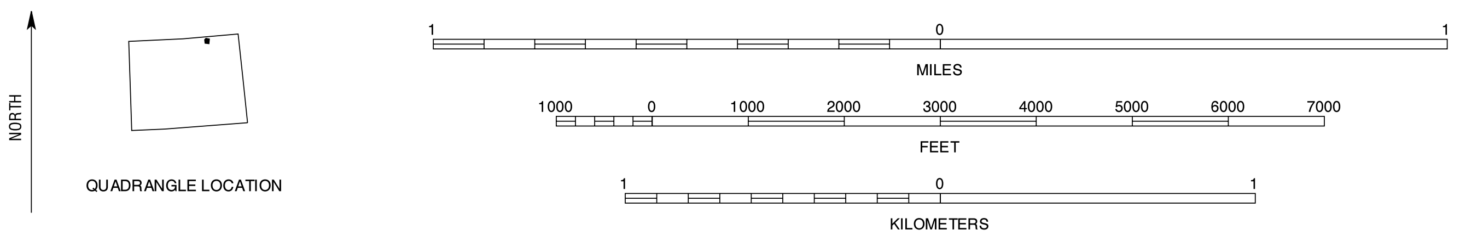


Joins sheet 1, Cabin Creek NE
Joins sheet 2, Black Draw
106° 07′30″
106° 05′00″
106° 02′30″
106° 00′00″
R. 77 W.
R. 76 W.
44° 52′30″
T. 57 N.
T. 56 N.
44° 50′00″
44° 47′30″
T. 56 N.
T. 55 N.
44° 45′00″
33
4
3
9
10
16
15
21
22
28
27
33
34
4
3
9
10
SHERIDAN COUNTY
CAMPBELL COUNTY
Joins sheet 11, Kline Draw
Joins sheet 19, Arvada NE
Joins sheet 20, Larey Draw

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SCALE 1:24000



NORTH
QUADRANGLE LOCATION
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

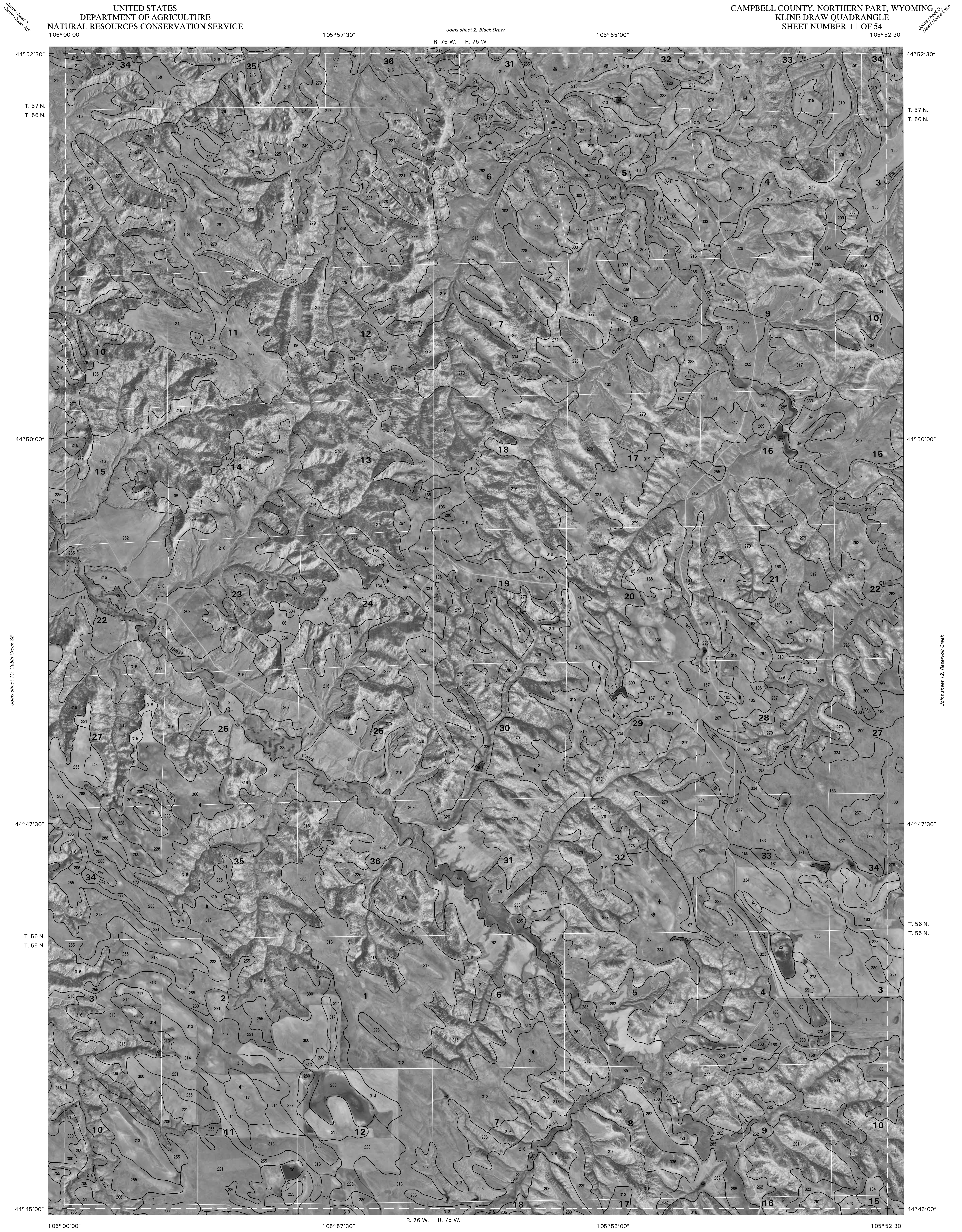
CABIN CREEK SE, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 10 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

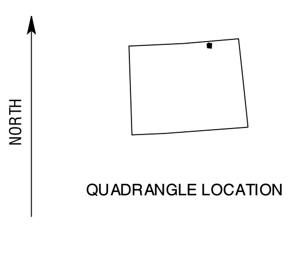
CAMPBELL COUNTY, NORTHERN PART, WYOMING
KLINE DRAW QUADRANGLE
SHEET NUMBER 11 OF 54



Joins sheet 1, Cabin Creek NE
Joins sheet 2, Black Draw
Joins sheet 3, Dead Horse Lake
Joins sheet 10, Cabin Creek SE
Joins sheet 12, Reservoir Creek
Joins sheet 19, Arvada NE
Joins sheet 20, Larey Draw
Joins sheet 21, Spotted Horse
106° 00′00″
105° 57′30″
105° 55′00″
105° 52′30″
44° 52′30″
44° 50′00″
44° 47′30″
44° 45′00″
R. 76 W.
R. 75 W.
T. 57 N.
T. 56 N.
T. 55 N.
Kline Draw
Creek
South Prong

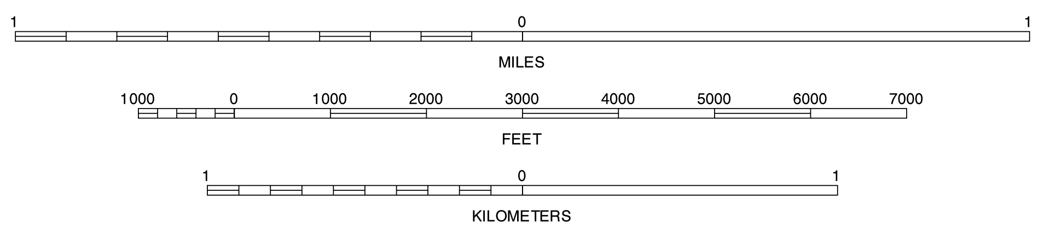
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000



1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

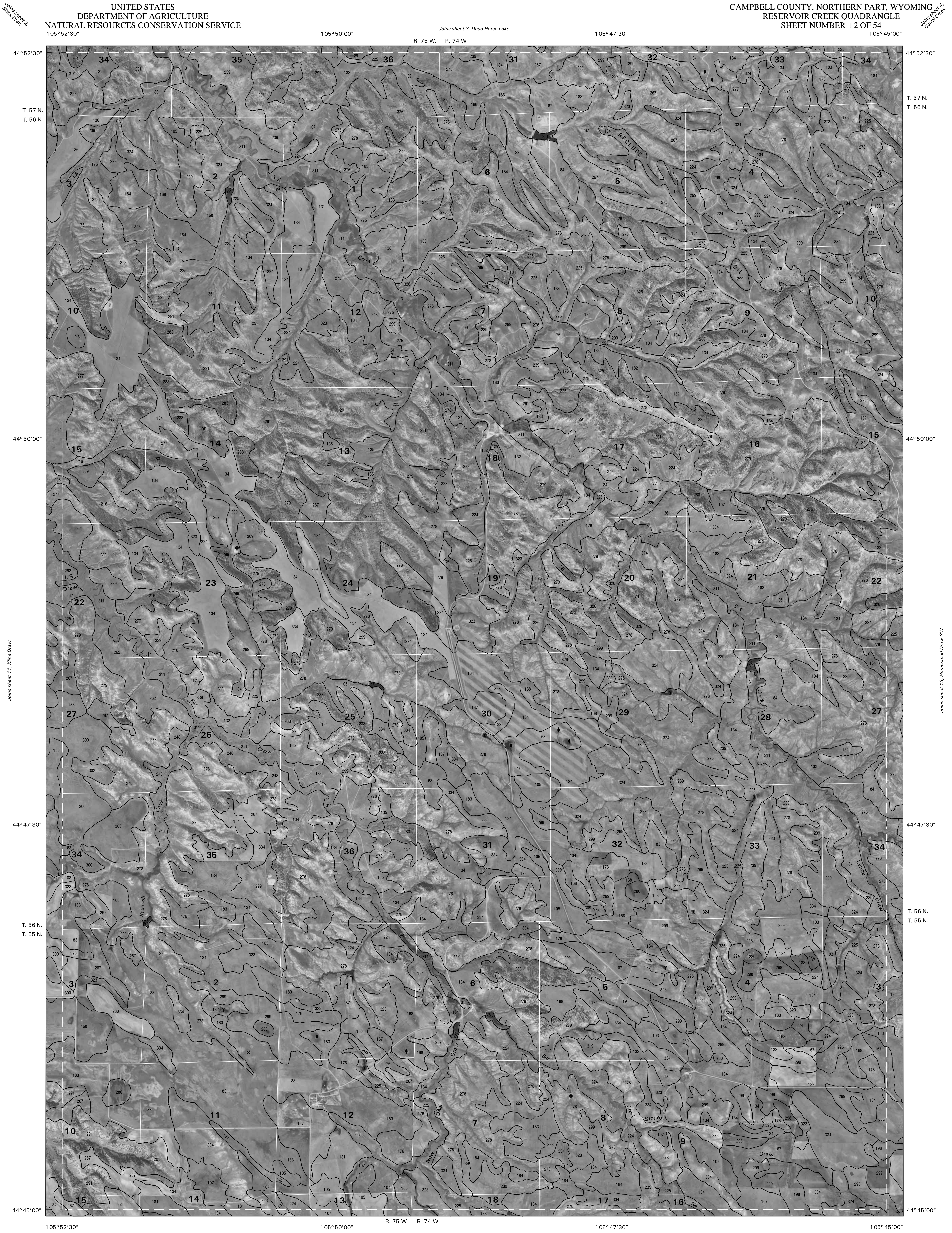
KLINE DRAW, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 11 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

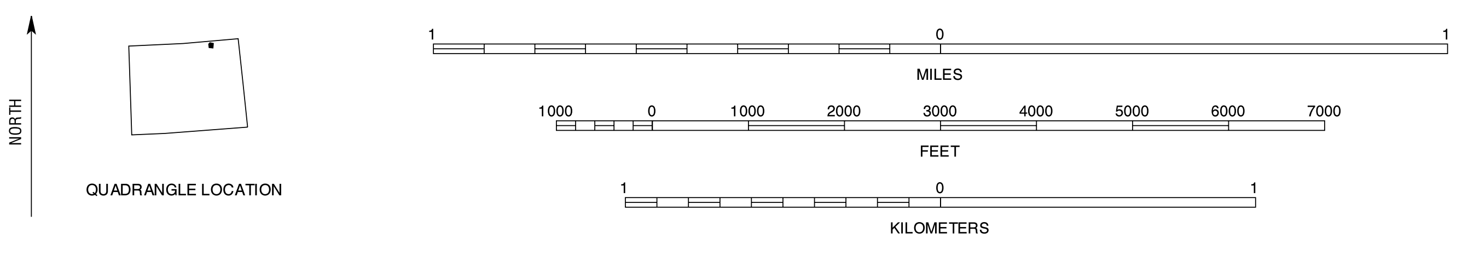
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
RESERVOIR CREEK QUADRANGLE
SHEET NUMBER 12 OF 54


Joins sheet 2, Black Draw
Joins sheet 3, Dead Horse Lake
Joins sheet 4, Corral Creek
Joins sheet 11, Kline Draw
Joins sheet 13, Homestead Draw SW
Joins sheet 20, Larey Draw
Joins sheet 21, Spotted Horse
Joins sheet 22, Recluse
105° 52′30″
105° 50′00″
105° 47′30″
105° 45′00″
44° 52′30″
44° 50′00″
44° 47′30″
44° 45′00″
R. 75 W.
R. 74 W.
T. 57 N.
T. 56 N.
T. 55 N.

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

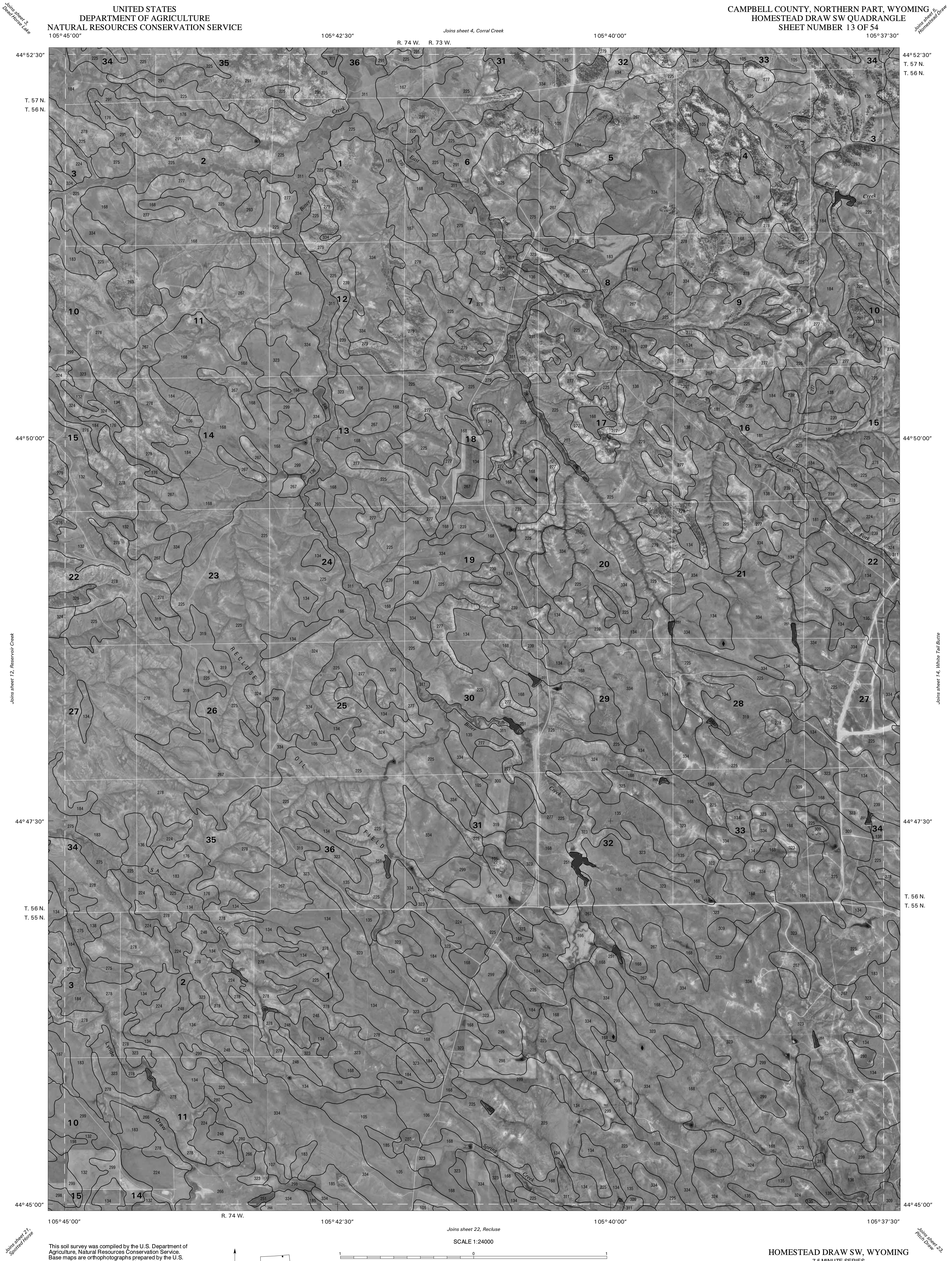

NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

RESERVOIR CREEK, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 12 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

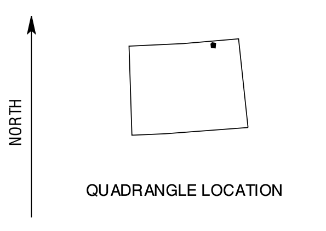
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
HOMESTEAD DRAW SW QUADRANGLE
SHEET NUMBER 13 OF 54

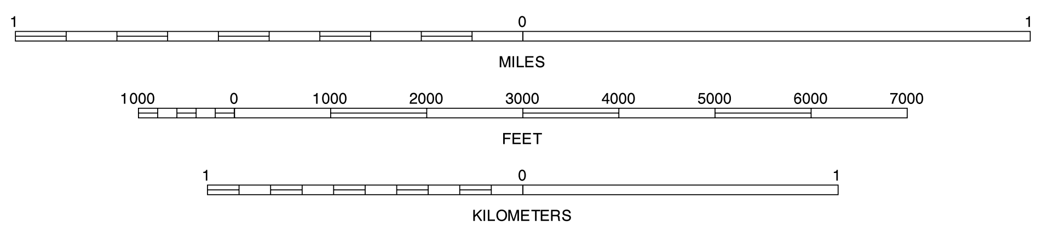

Joins sheet 3, Dead Horse Lake
Joins sheet 4, Corral Creek
Joins sheet 5, Homestead Draw
105° 45′00″
105° 42′30″
105° 40′00″
105° 37′30″
44° 52′30″
44° 50′00″
44° 47′30″
44° 45′00″
R. 74 W.
R. 73 W.
T. 57 N.
T. 56 N.
T. 55 N.
Joins sheet 12, Reservoir Creek
Joins sheet 14, White Tail Butte
Bitter Creek
East Fork
Dutch Evans Armstrong Draw
RECLUSE OIL FIELD
Spring Creek
Creek
Draw
Joins sheet 21, Spotted Horse
Joins sheet 22, Recluse
Joins sheet 23, Pitch Draw

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

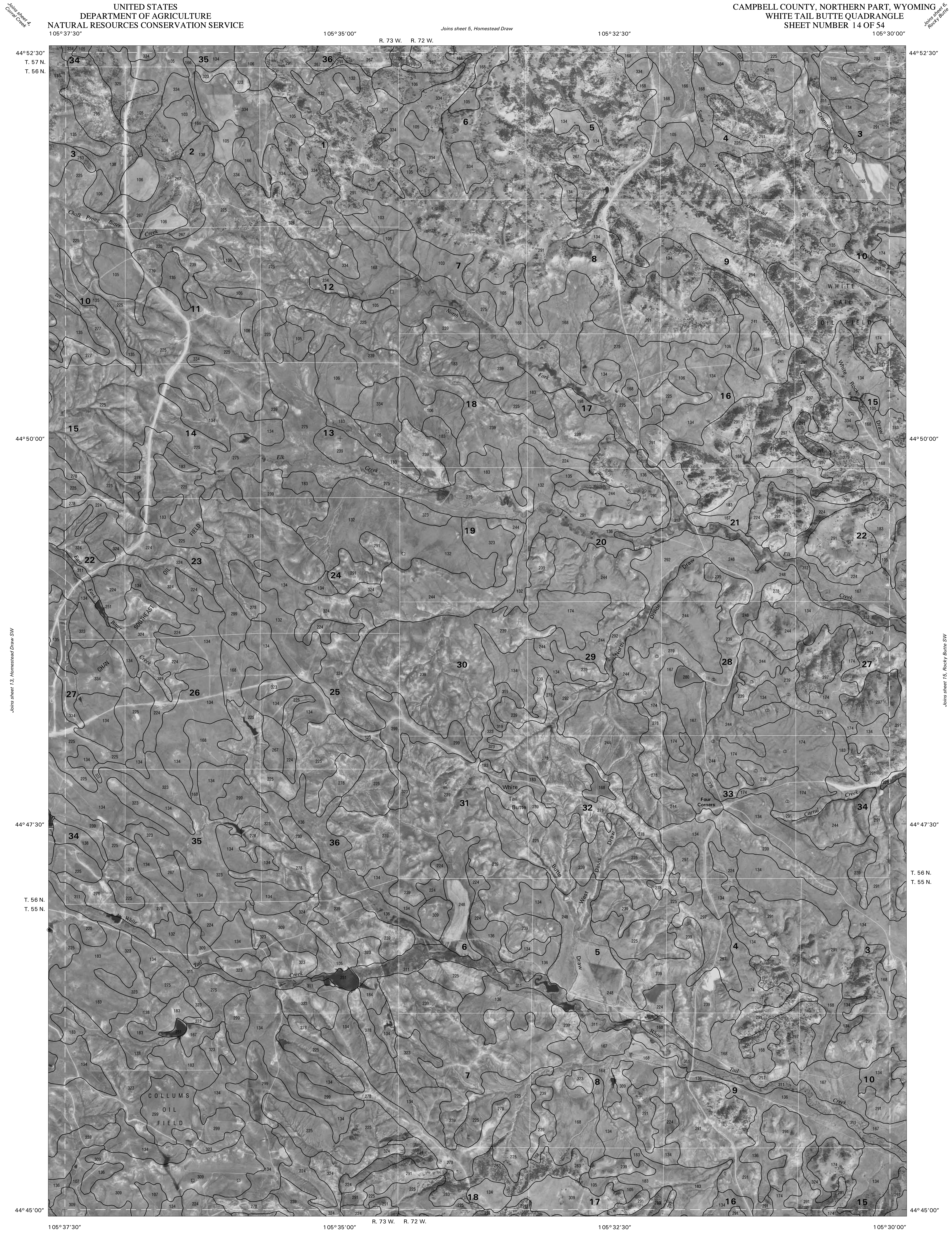
HOMESTEAD DRAW SW, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 13 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
WHITE TAIL BUTTE QUADRANGLE
SHEET NUMBER 14 OF 54

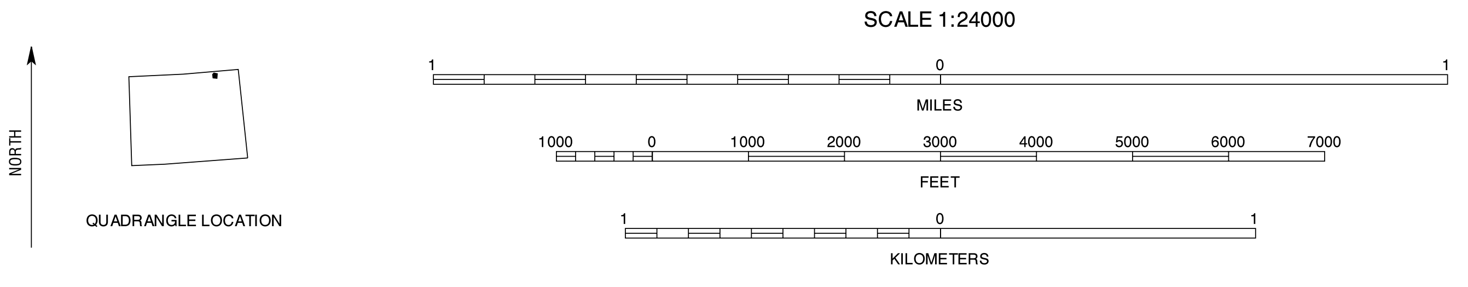

Joins sheet 4, Corral Creek
Joins sheet 5, Homestead Draw
Joins sheet 6, Rocky Butte
Joins sheet 13, Homestead Draw SW
Joins sheet 15, Rocky Butte SW
Joins sheet 22, Recluse
Joins sheet 23, Pitch Draw
Joins sheet 24, Oliver Draw
105° 37′30″
105° 35′00″
105° 32′30″
105° 30′00″
44° 52′30″
44° 50′00″
44° 47′30″
44° 45′00″
R. 73 W.
R. 72 W.
T. 57 N.
T. 56 N.
T. 55 N.
Chalk Prong Bitter Creek
South Fork Olmstead
Crosslet Draw
WHITE TAIL OIL FIELD
White Rock Draw
North Fork
Elk Creek
Divide Draw
North Divide
ELK FORK OIL FIELD
SOUTHEAST CHAN Bitter Creek
White Tail Butte
Four Corners
Corral Creek
West Butte Draw
Davis Draw
White Tail Creek
COLLUMS OIL FIELD

WHITE TAIL BUTTE, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 14 OF 54

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

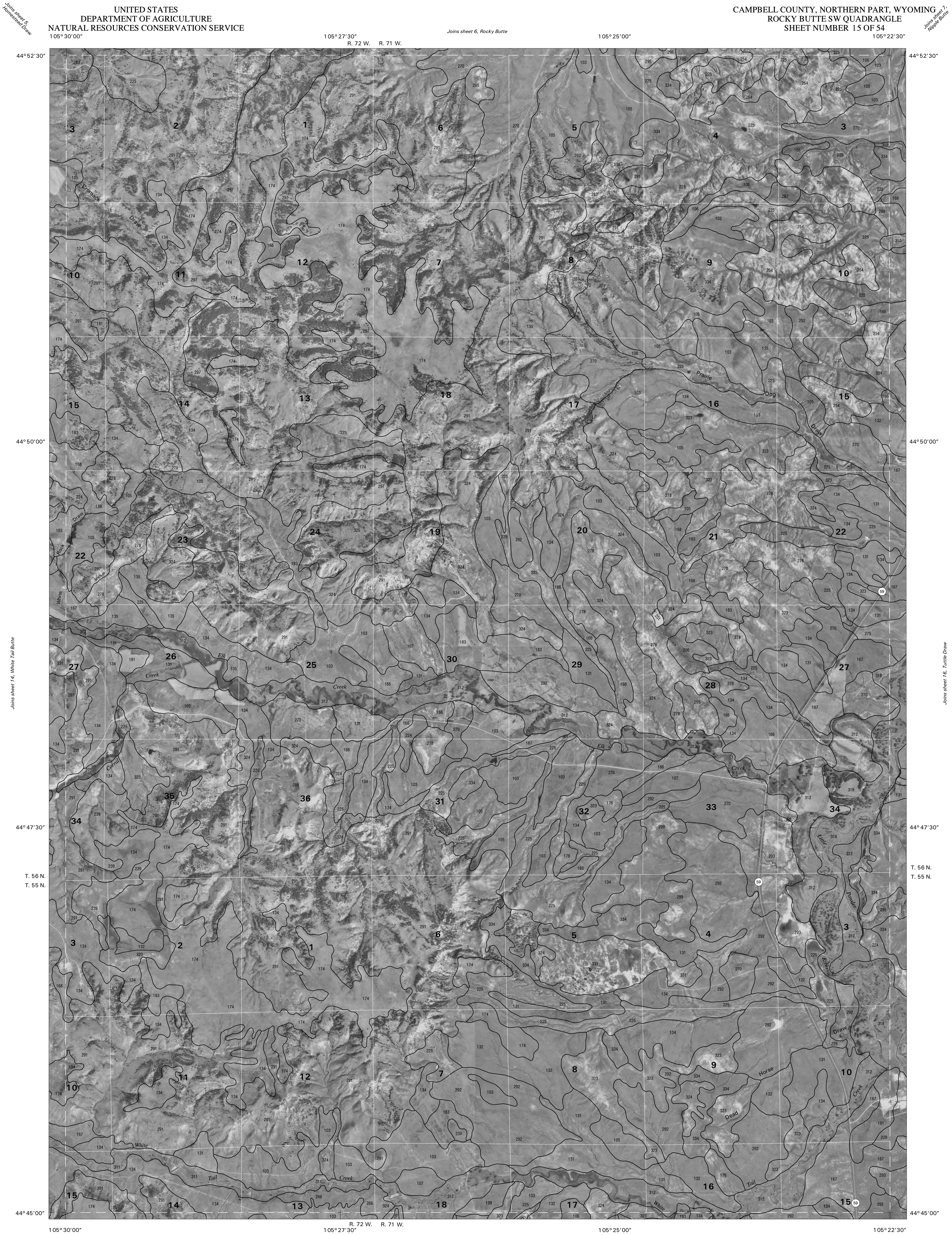
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

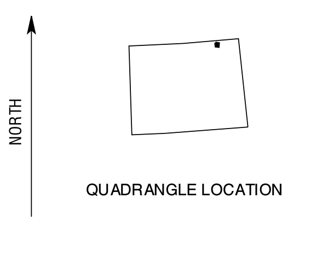
CAMPBELL COUNTY, NORTHERN PART, WYOMING
ROCKY BUTTE SW QUADRANGLE
SHEET NUMBER 15 OF 54


Joins sheet 5, Homestead Draw
Joins sheet 6, Rocky Butte
Joins sheet 7, Nipple Butte
Joins sheet 14, White Tail Butte
Joins sheet 16, Tuttle Draw
Joins sheet 24, Oliver Draw
105° 30′00″
105° 27′30″
105° 25′00″
105° 22′30″
44° 52′30″
44° 50′00″
44° 47′30″
44° 45′00″
R. 72 W.
R. 71 W.
T. 56 N.
T. 55 N.
Cromack Draw
Prairie Dog Draw
White Tail Creek
Elk Creek
Little Powder River
Dead Horse Draw
Coal Creek
59
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36

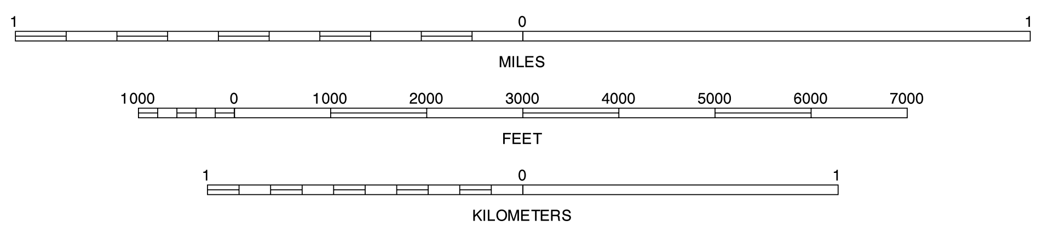
Joins sheet 23, Pitch Draw
Joins sheet 25, Weston

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

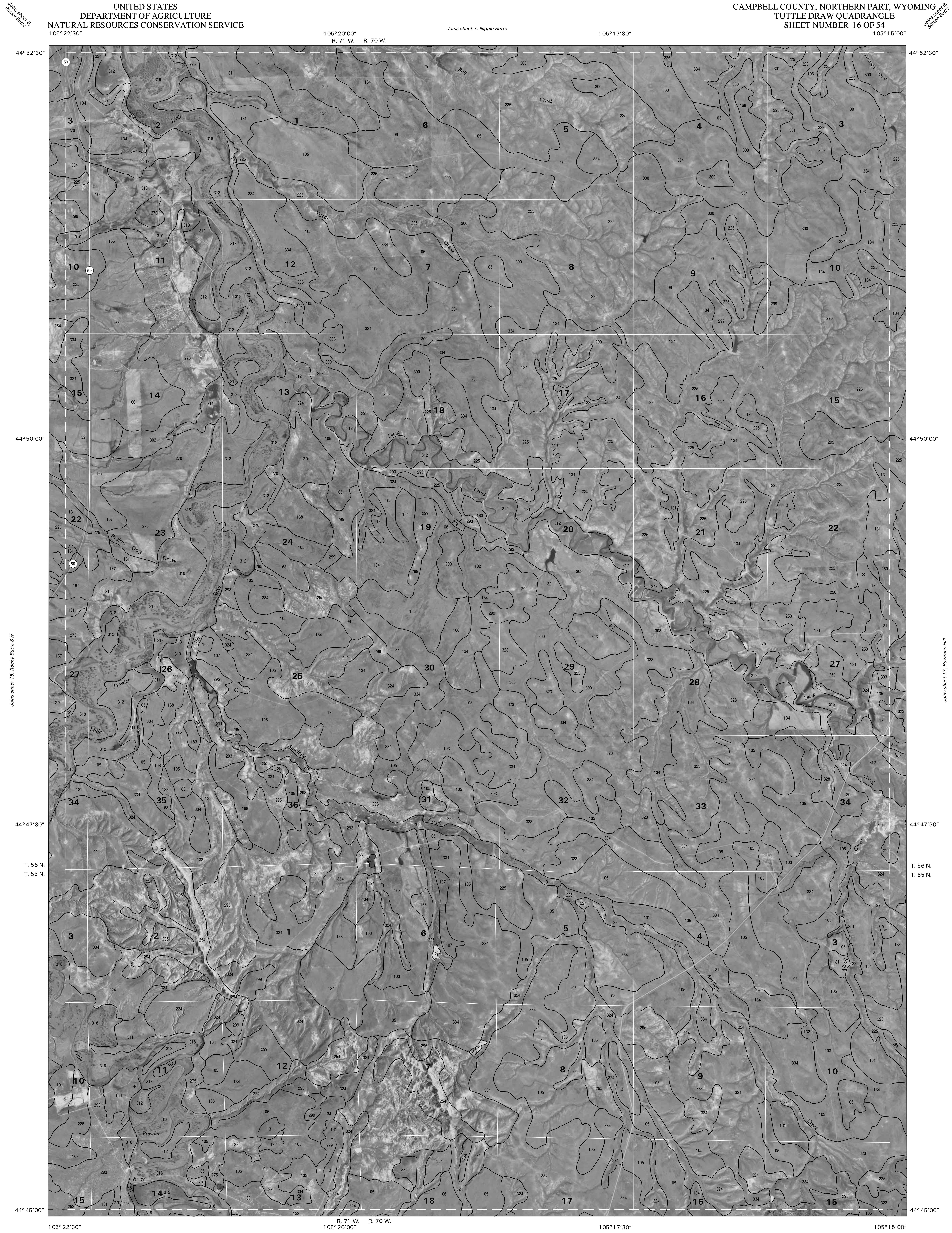
ROCKY BUTTE SW, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 15 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

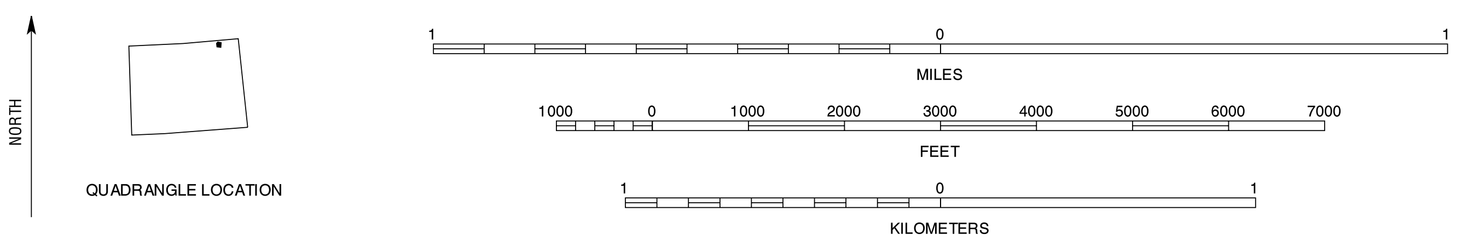
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
TUTTLE DRAW QUADRANGLE
SHEET NUMBER 16 OF 54


Joins sheet 6, Rocky Butte
Joins sheet 7, Nipple Butte
Joins sheet 8, Mitten Butte
Joins sheet 15, Rocky Butte SW
Joins sheet 17, Bowman Hill
Joins sheet 24, Oliver Draw
Joins sheet 25, Weston
Joins sheet 26, Adon NW
105°22'30"
105°20'00"
105°17'30"
105°15'00"
44°52'30"
44°50'00"
44°47'30"
44°45'00"
R. 71 W.
R. 70 W.
T. 56 N.
T. 55 N.
Little Powder River
Tuttle Draw
Bell Creek
Duck Creek
Prairie Dog Draw
Antelope Creek

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

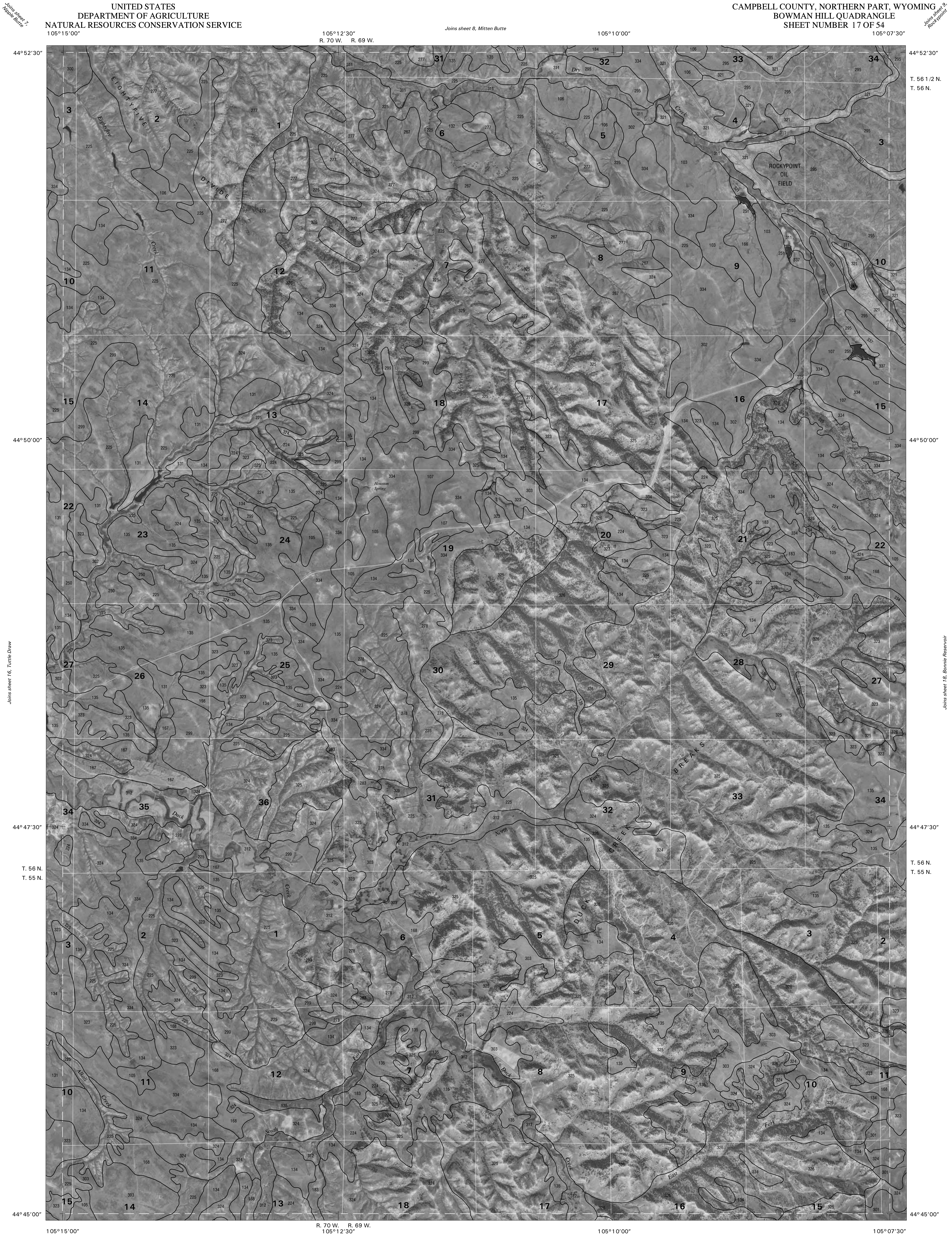
TUTTLE DRAW, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 16 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
BOWMAN HILL QUADRANGLE
SHEET NUMBER 17 OF 54


Joins sheet 7, Nipple Butte
Joins sheet 8, Mitten Butte
Joins sheet 9, Rockypoint
Joins sheet 16, Tuttle Draw
Joins sheet 18, Bonnie Reservoir
Joins sheet 25, Weston
Joins sheet 26, Adon NW
Joins sheet 27, Brislawn School
105°15′00″
105°12′30″
105°10′00″
105°07′30″
44°52′30″
44°50′00″
44°47′30″
44°45′00″
R. 70 W.
R. 69 W.
T. 56 1/2 N.
T. 56 N.
T. 55 N.
EIGHTYFIVE DIVIDE
Eightyfive Creek
Dry Creek
ROCKYPOINT OIL FIELD
Bowman Spring
BREAKS
North Fork Duck Creek
DUCK CREEK
South Fork Duck Creek
East Fork
Mudd Creek

SCALE 1:24000

MILES

FEET

KILOMETERS

NORTH

QUADRANGLE LOCATION

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

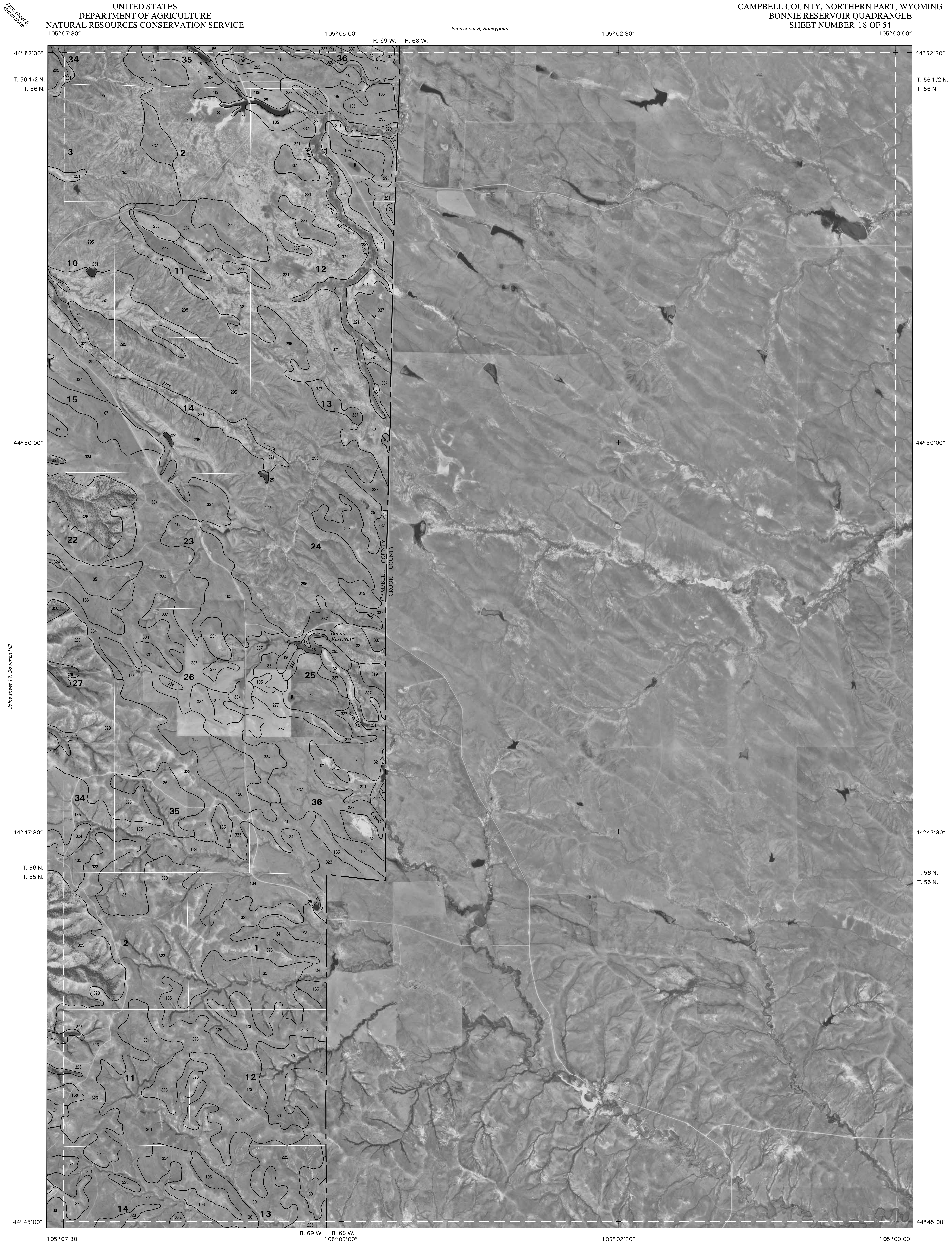
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

BOWMAN HILL, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 17 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

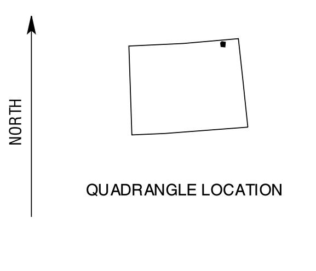
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
BONNIE RESERVOIR QUADRANGLE
SHEET NUMBER 18 OF 54


Joins sheet 8, Mitten Butte
Joins sheet 9, Rockypoint
Joins sheet 17, Bowman Hill
Joins sheet 26, Adon NW
Joins sheet 27, Brislawn School
105° 07′30″
105° 05′00″
105° 02′30″
105° 00′00″
44° 52′30″
44° 50′00″
44° 47′30″
44° 45′00″
R. 69 W.
R. 68 W.
T. 56 1/2 N.
T. 56 N.
T. 55 N.
CAMPBELL COUNTY
CROOK COUNTY
North Fork Little Missouri River
Dry Creek
Bonnie Reservoir
Creek
34
35
36
3
2
1
10
11
12
15
14
13
22
23
24
27
26
25
34
35
36
2
1
11
12
14
13

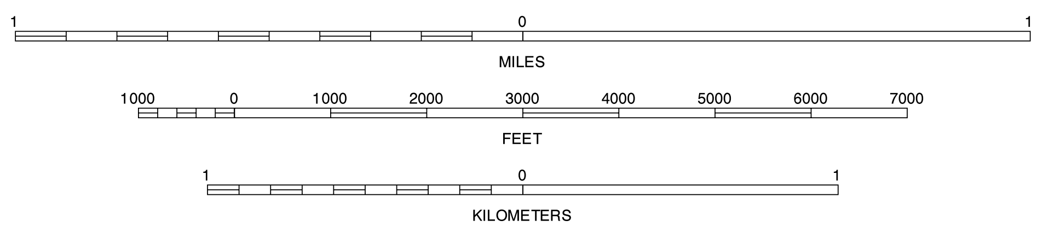
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

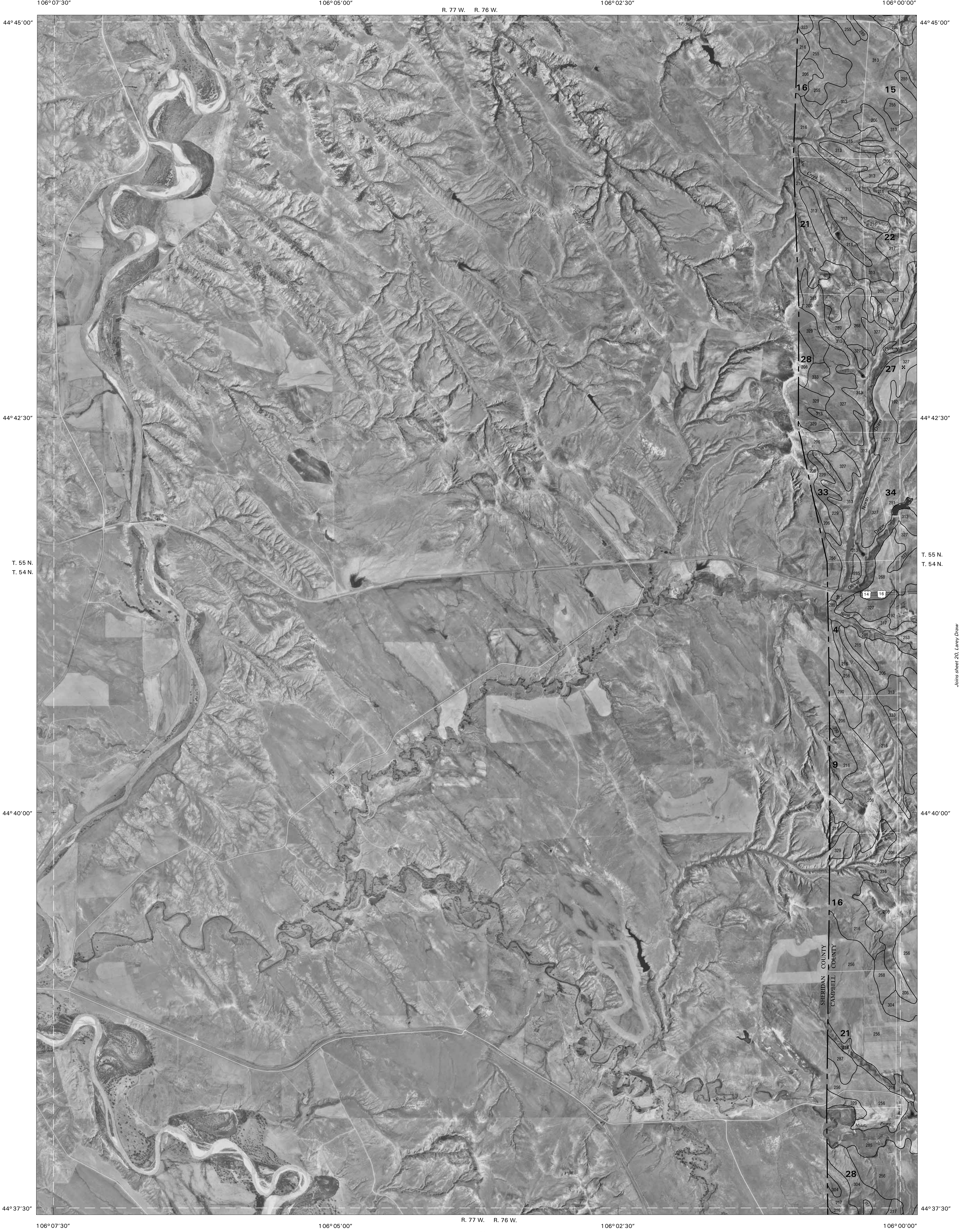
BONNIE RESERVOIR, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 18 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
ARVADA NE QUADRANGLE
SHEET NUMBER 19 OF 54



Joins sheet 10, Cabin Creek SE
Joins sheet 11, Kline Draw
Joins sheet 20, Larey Draw
Joins sheet 28, Lariat
Joins sheet 29, Croton
106° 07′30″
106° 05′00″
106° 02′30″
106° 00′00″
44° 45′00″
44° 42′30″
44° 40′00″
44° 37′30″
R. 77 W.
R. 76 W.
T. 55 N.
T. 54 N.
16
15
21
22
28
27
33
34
4
9
16
21
28
14
16
SHERIDAN COUNTY
CAMPBELL COUNTY
Draw
Draw
313
255
206
216
327
256
217
304

SCALE 1:24000

1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS
NORTH
QUADRANGLE LOCATION

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

ARVADA NE, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 19 OF 54

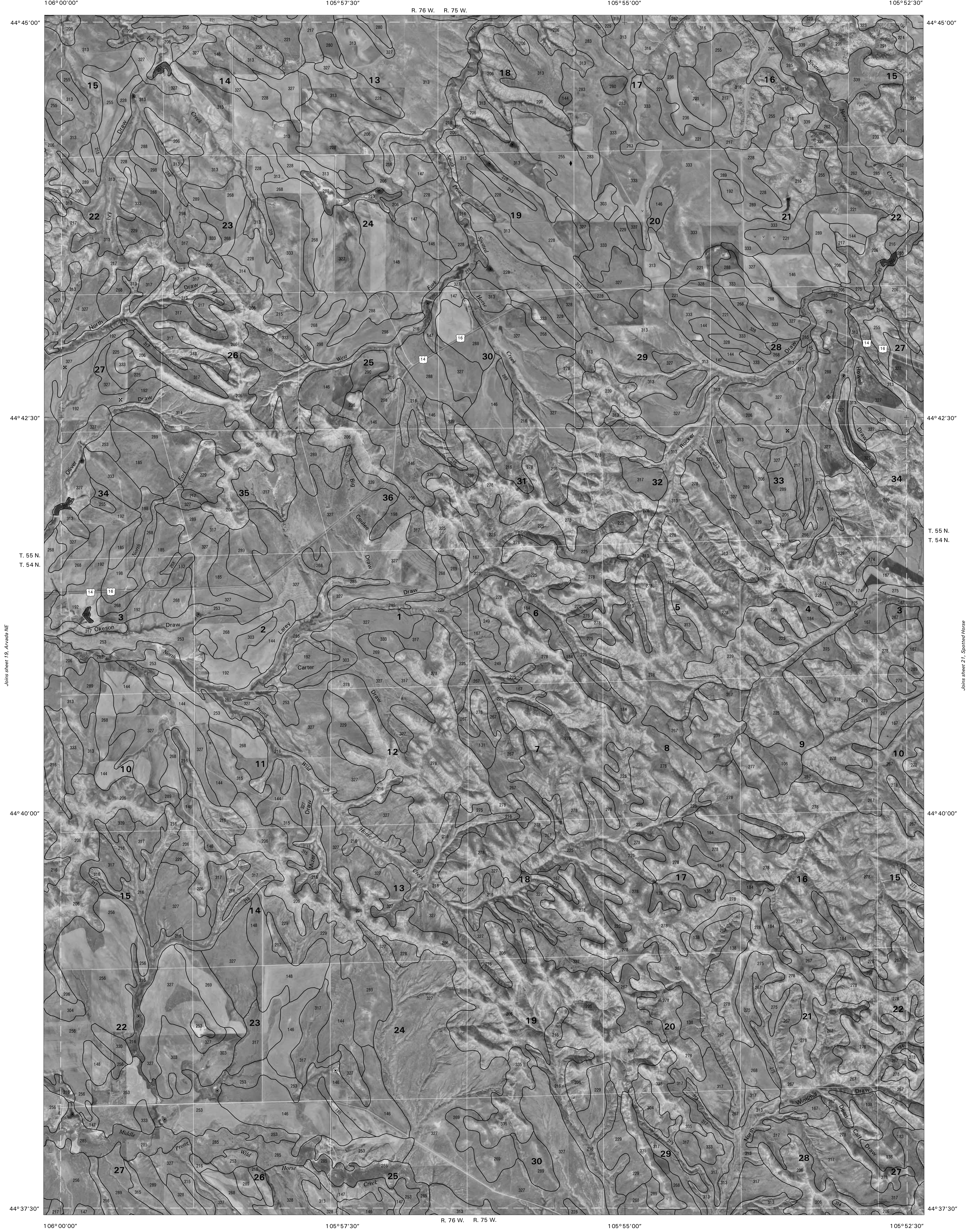
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 10, Cabin Creek SE

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
LAREY DRAW QUADRANGLE
SHEET NUMBER 20 OF 54

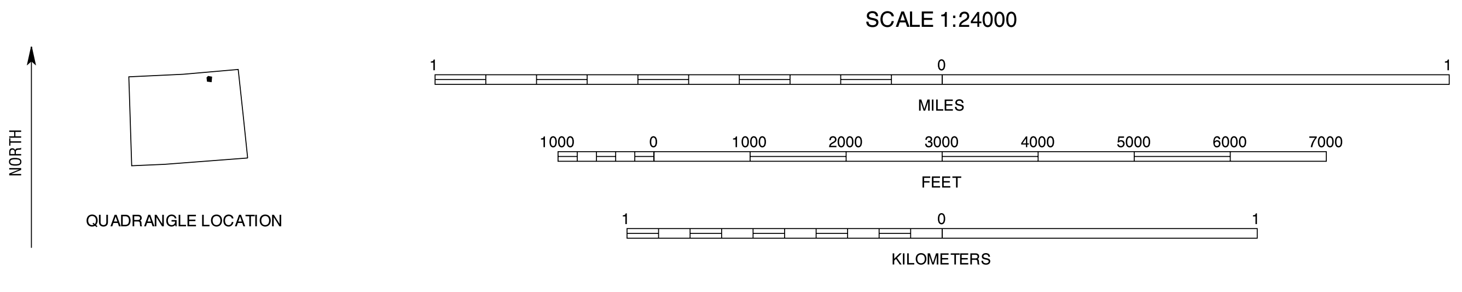
Joins sheet 12, Reservoir Creek


Joins sheet 11, Kline Draw
106° 00′00″
105° 57′30″
105° 55′00″
105° 52′30″
R. 76 W.
R. 75 W.
44° 45′00″
44° 42′30″
44° 40′00″
44° 37′30″
T. 55 N.
T. 54 N.
Joins sheet 19, Arvada NE
Joins sheet 21, Spotted Horse
Joins sheet 29, Croton
Ivy
Creek
Draw
North
Fork
Spotted
Horse
West
Oliver
Big
Coulee
Larey
Okeson
Carter
Prong
Wild
Mule
Rucker
Hoemell
Middle
Wyoming
Dead
Calf
14
16
1
2
3
4
5
6
7
8
9
10
11
12
13
15
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36

Joins sheet 28, Lariat

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

LAREY DRAW, WYOMING

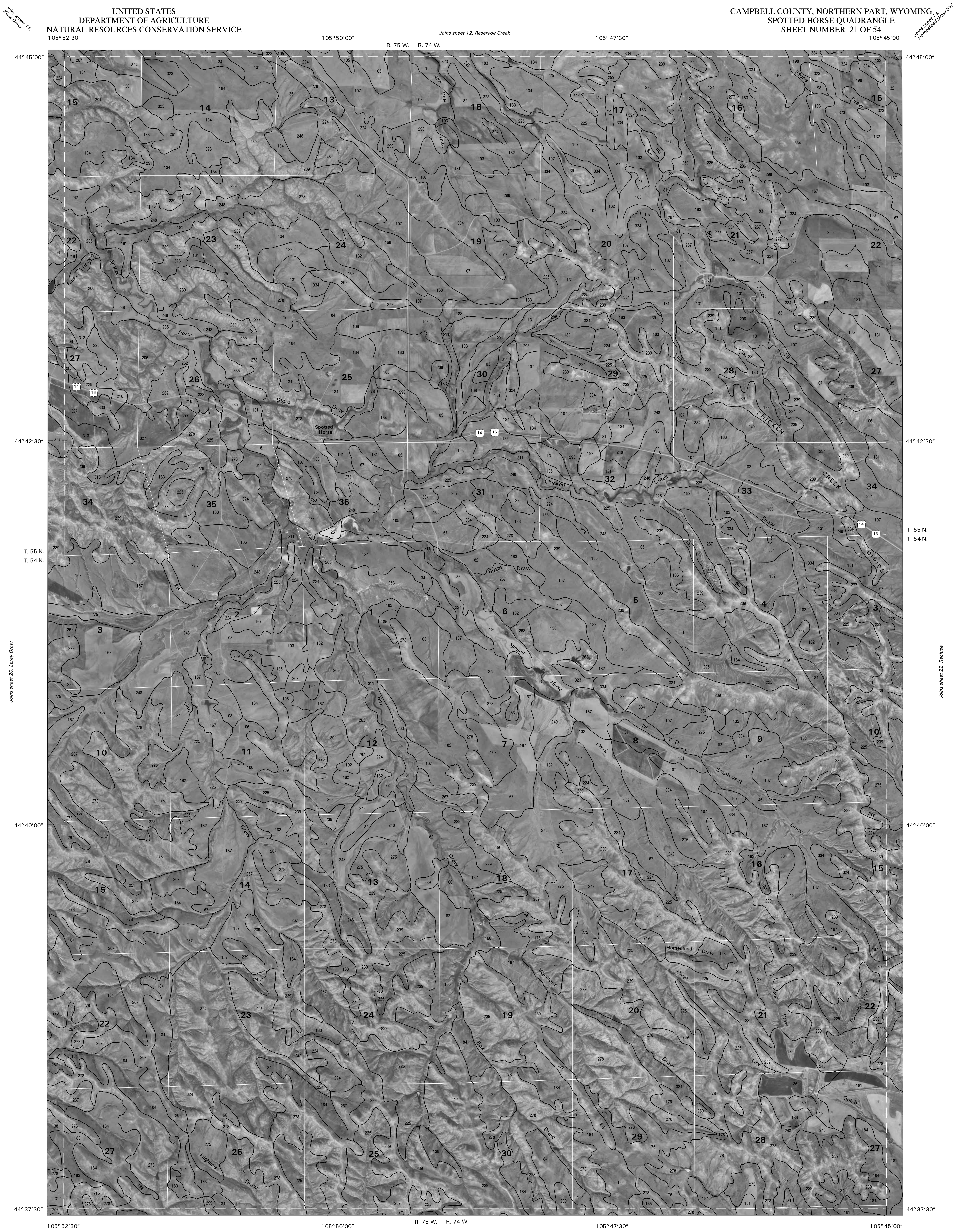
7.5 MINUTE SERIES
SHEET NUMBER 20 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 30, Truman Draw

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

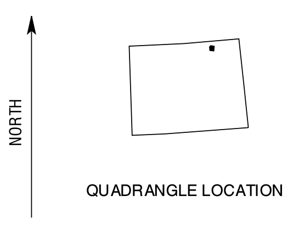
CAMPBELL COUNTY, NORTHERN PART, WYOMING
SPOTTED HORSE QUADRANGLE
SHEET NUMBER 21 OF 54



Joins sheet 11, Kline Draw
Joins sheet 12, Reservoir Creek
Joins sheet 13, Homestead Draw SW
Joins sheet 20, Laney Draw
Joins sheet 22, Recluse
Joins sheet 29, Croton
Joins sheet 30, Truman Draw
Joins sheet 31, Wildcat
105° 52′30″
105° 50′00″
105° 47′30″
105° 45′00″
44° 45′00″
44° 42′30″
44° 40′00″
44° 37′30″
R. 75 W.
R. 74 W.
T. 55 N.
T. 54 N.
Spotted Horse
Chicken Creek
Spotted Horse Creek
Stone Draw
Butte Draw
Box Draw
Lime Draw
Southwest Draw
TD Creek
Homestead Draw
Washout Draw
Highline Draw
Dry Gulch
Horse Creek
14
16

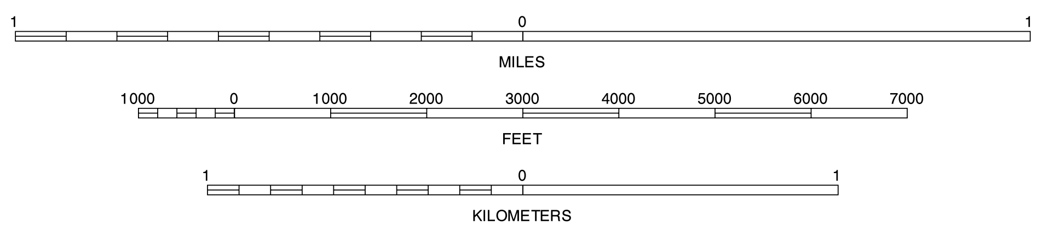
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000



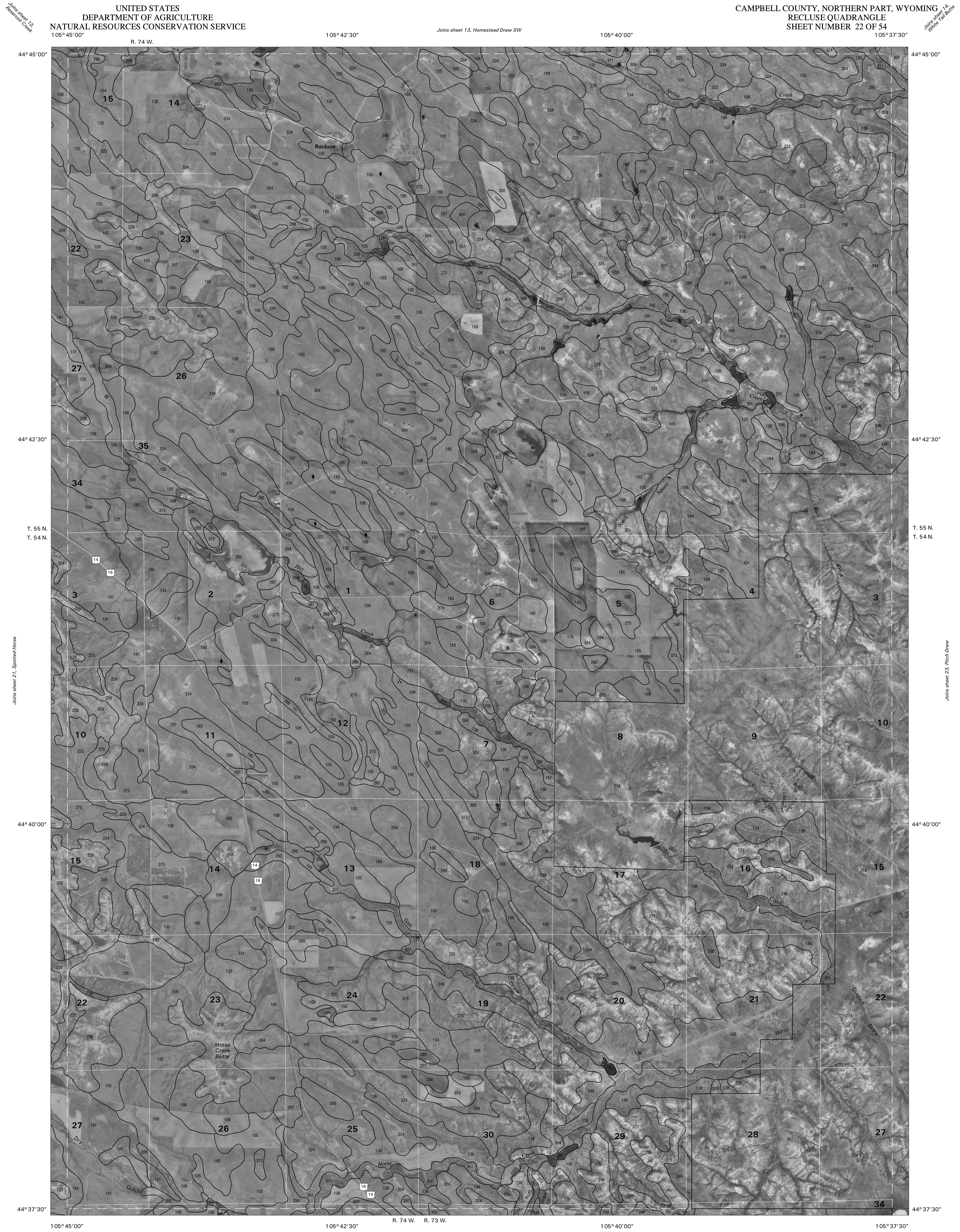
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

SPOTTED HORSE, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 21 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

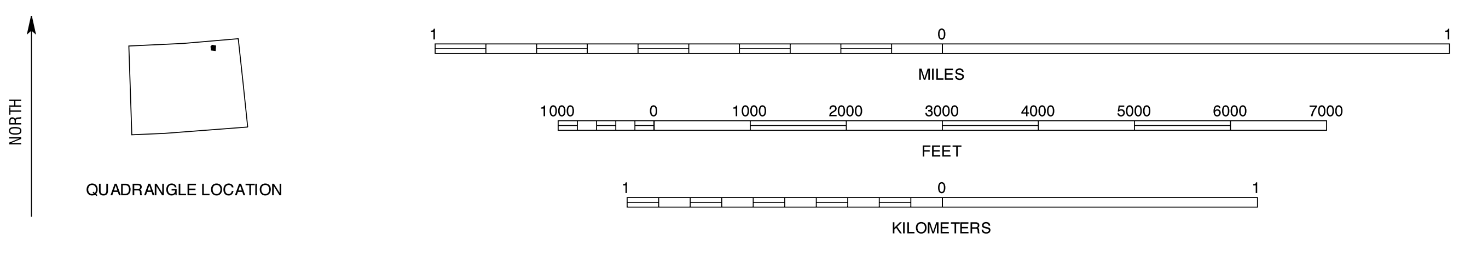
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
RECLUSE QUADRANGLE
SHEET NUMBER 22 OF 54


Joins sheet 12, Reservoir Creek
Joins sheet 13, Homestead Draw SW
Joins sheet 14, White Tail Butte
Joins sheet 21, Spotted Horse
Joins sheet 23, Pitch Draw
Joins sheet 30, Truman Draw
Joins sheet 31, Wildcat
Joins sheet 32, Calf Creek
105° 45′00″
105° 42′30″
105° 40′00″
105° 37′30″
44° 45′00″
44° 42′30″
44° 40′00″
44° 37′30″
R. 74 W.
R. 73 W.
T. 55 N.
T. 54 N.
Recluse
Spring Creek
Squaw Creek
South Squaw
Buck Creek
Hay Creek
Gas Draw
Horse Creek
Horse Creek Butte
Dugout Draw
Dry Gulch
Ruff Draw
14
16
15
14
22
23
27
26
35
34
3
2
1
6
5
4
3
10
11
12
7
8
9
10
15
14
13
18
17
16
15
22
23
24
19
20
21
22
27
26
25
30
29
28
27
34

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

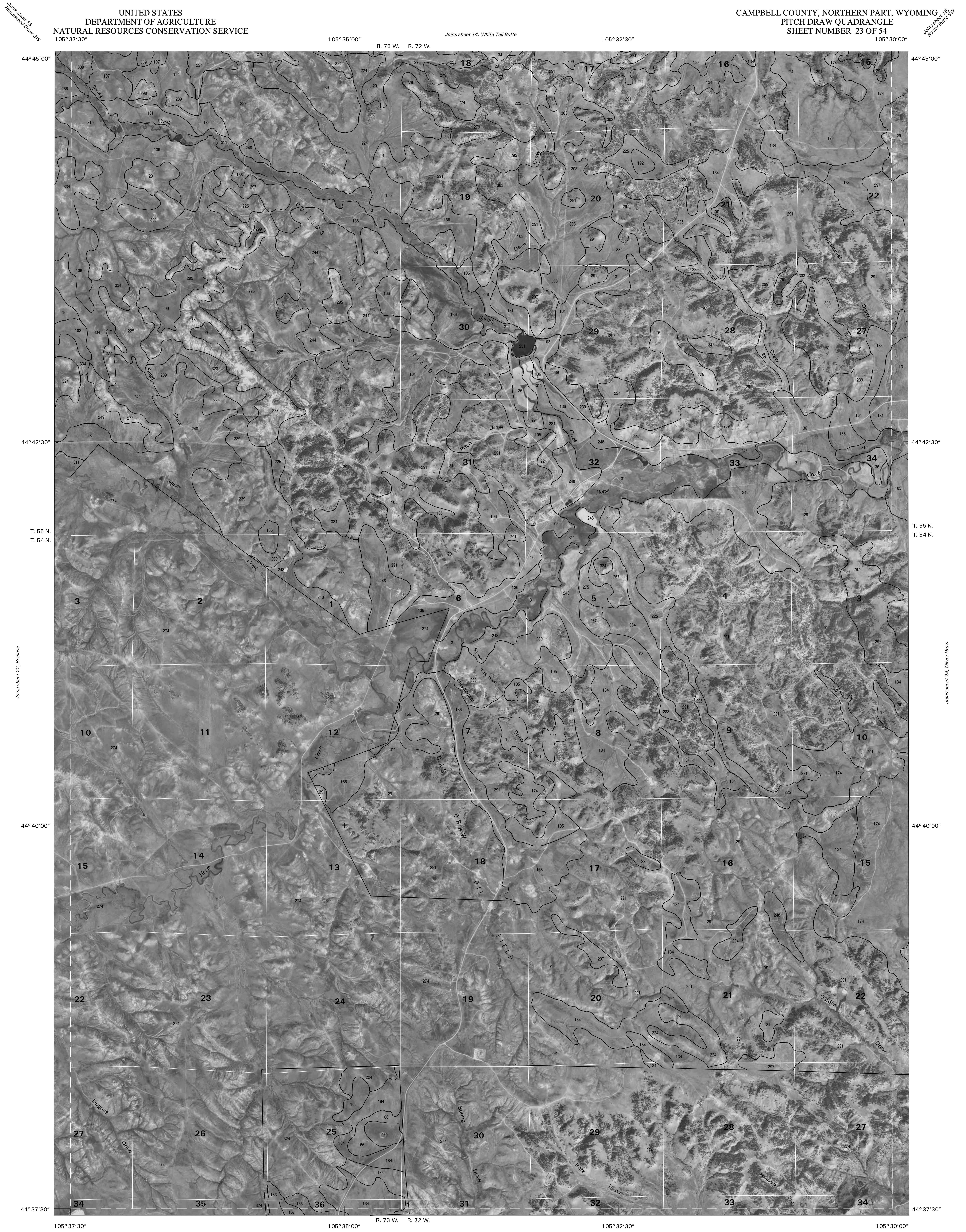
RECLUSE, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 22 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

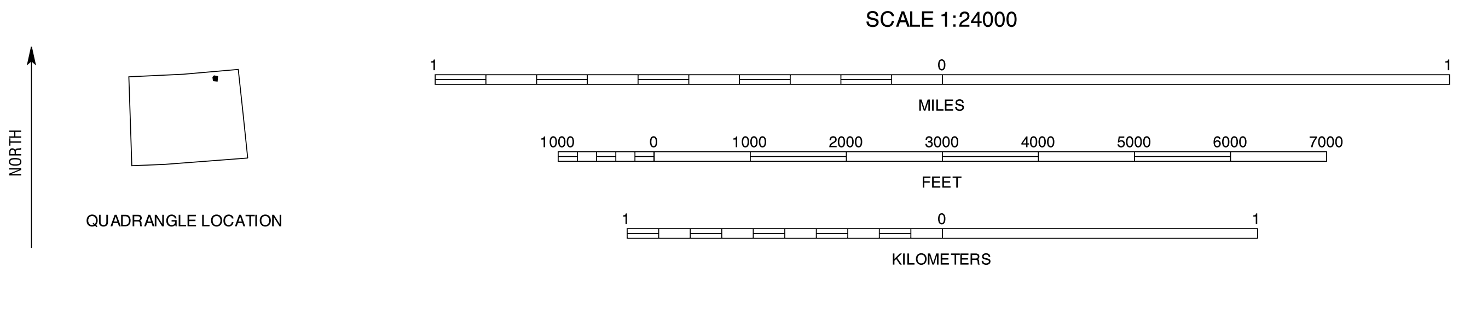
CAMPBELL COUNTY, NORTHERN PART, WYOMING
PITCH DRAW QUADRANGLE
SHEET NUMBER 23 OF 54



Joins sheet 13, Homestead Draw SW
Joins sheet 14, White Tail Butte
Joins sheet 15, Rocky Butte SW
Joins sheet 22, Recluse
Joins sheet 24, Oliver Draw
Joins sheet 31, Wildcat
Joins sheet 32, Calf Creek
Joins sheet 33, Weston SW
105° 37′30″
105° 35′00″
105° 32′30″
105° 30′00″
44° 45′00″
44° 42′30″
44° 40′00″
44° 37′30″
R. 73 W.
R. 72 W.
T. 55 N.
T. 54 N.
18
17
16
15
19
20
21
22
30
29
28
27
31
32
33
34
6
5
4
3
2
1
7
8
9
10
11
12
13
14
15
18
17
16
15
22
23
24
19
20
21
22
27
26
25
30
29
28
27
34
35
36
31
32
33
34
Spring Creek
COLLUMS OIL FIELD
Spring Creek
Deen Draw
Northwest Paul Draw
Slope Draw
Pitch Draw
Horse Creek
Squaw Creek
Sand Rock Draw
Hardesty
Creek
GAS DRAW
OIL FIELD
Horse
Garden Draw
Dugout Draw
Spring Draw
Batz Draw

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



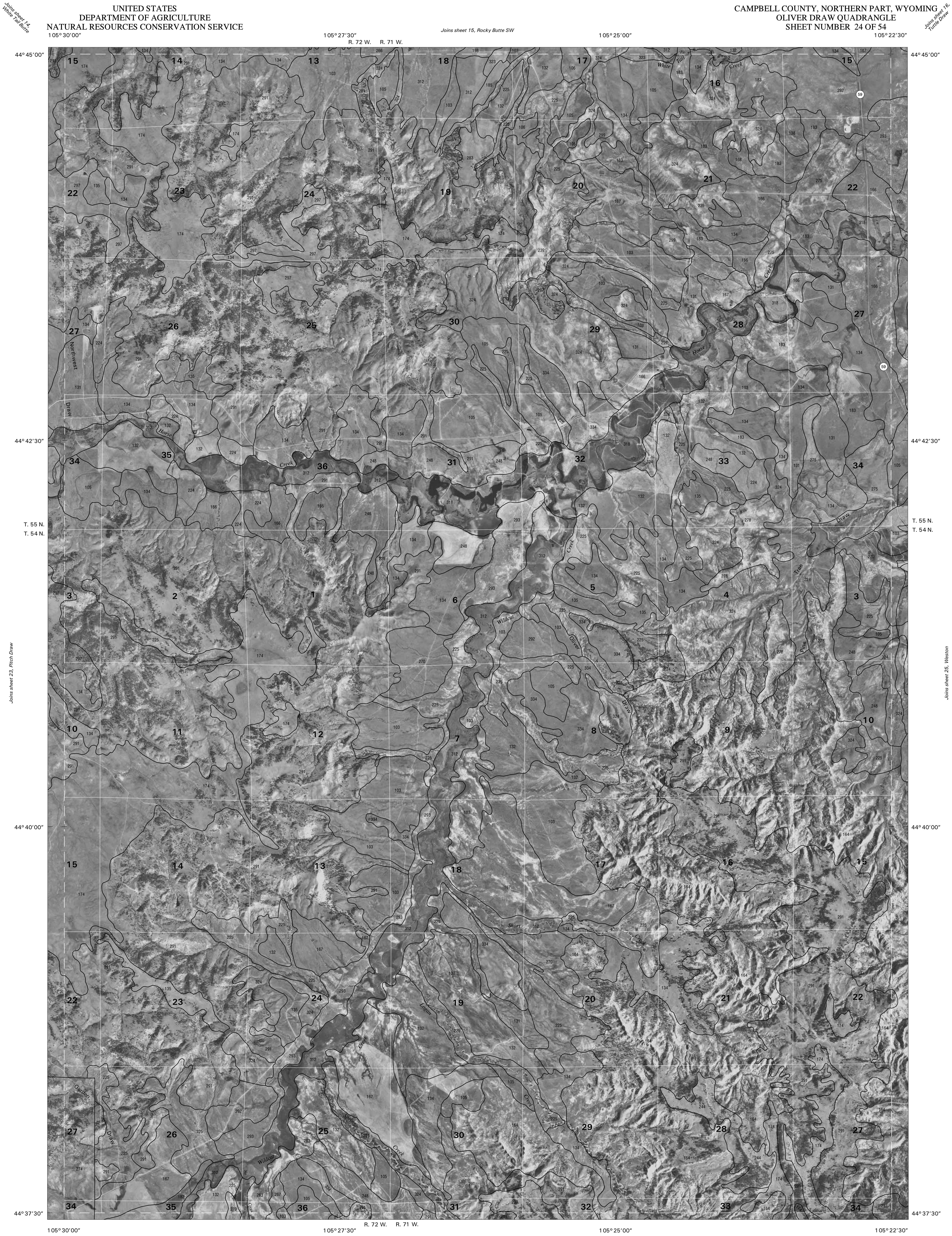
NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

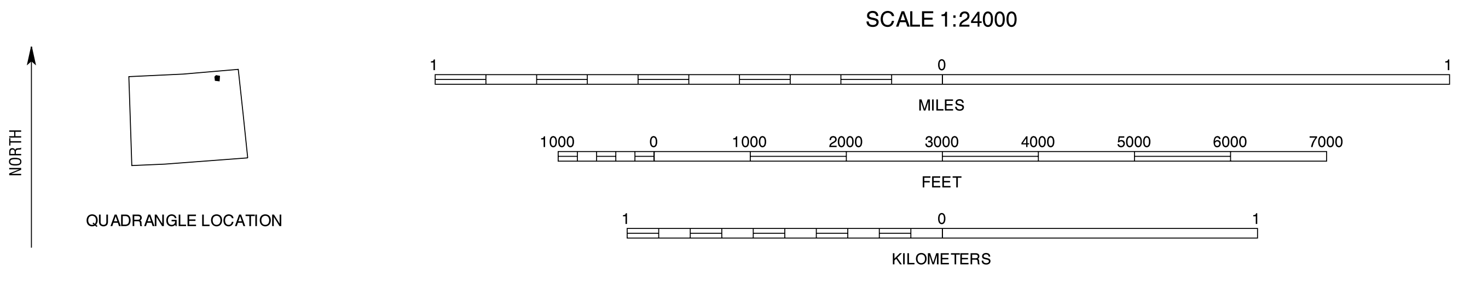
PITCH DRAW, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 23 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
OLIVER DRAW QUADRANGLE
SHEET NUMBER 24 OF 54


Joins sheet 14, White Tail Butte
Joins sheet 15, Rocky Butte SW
Joins sheet 16, Tuttle Draw
Joins sheet 23, Pitch Draw
Joins sheet 25, Weston
Joins sheet 32, Calf Creek
Joins sheet 33, Weston SW
Joins sheet 34, Lone Tree Creek
105° 30′00″
105° 27′30″
105° 25′00″
105° 22′30″
44° 45′00″
44° 42′30″
44° 40′00″
44° 37′30″
R. 72 W.
R. 71 W.
T. 55 N.
T. 54 N.
White Tail Creek
Horse Creek
Northwest Draw
Wildcat Creek
Oliver Draw
Tree Draw
Short Creek
Logan
Cuckoo Draw
No Creek
59


SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS
NORTH
QUADRANGLE LOCATION

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

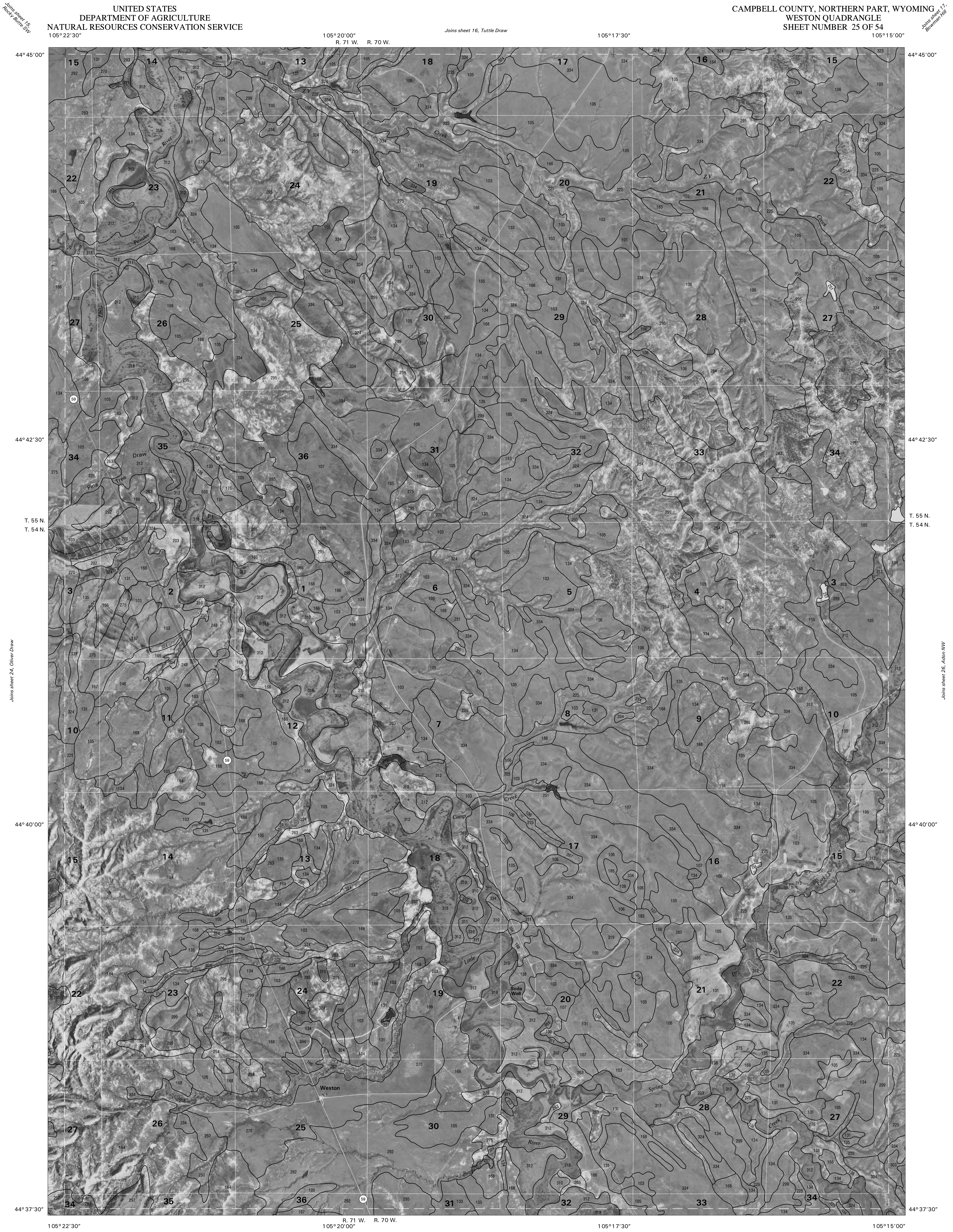
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

OLIVER DRAW, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 24 OF 54

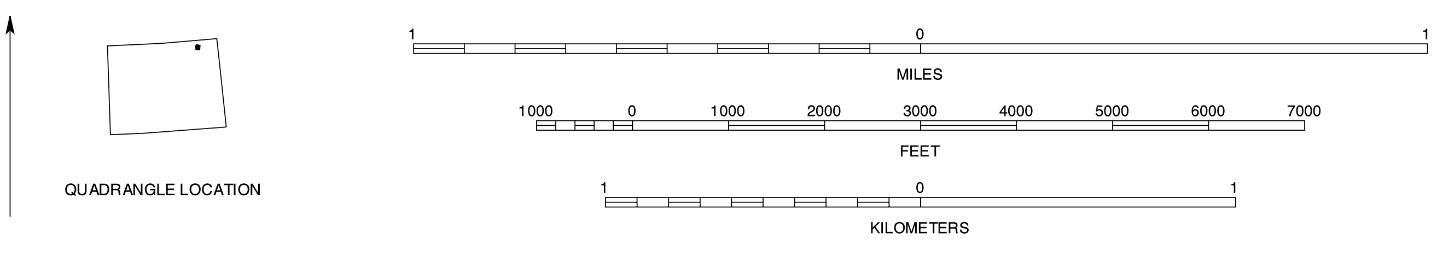
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
WESTON QUADRANGLE
SHEET NUMBER 25 OF 54



Joins sheet 15, Rocky Butte SW
Joins sheet 16, Tuttle Draw
Joins sheet 17, Bowman Hill
Joins sheet 24, Oliver Draw
Joins sheet 26, Adon NW
Joins sheet 33, Weston SW
Joins sheet 34, Lone Tree Creek
Joins sheet 35, Adon
105°22'30"
105°20'00"
105°17'30"
105°15'00"
44°45'00"
44°42'30"
44°40'00"
44°37'30"
R. 71 W.
R. 70 W.
T. 55 N.
T. 54 N.
Powder River
Little Powder River
Pine Tree Draw
Camp Creek
Spring Creek
Soda Well
Weston
59



NORTH
QUADRANGLE LOCATION
SCALE 1:24000
MILES
FEET
KILOMETERS

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

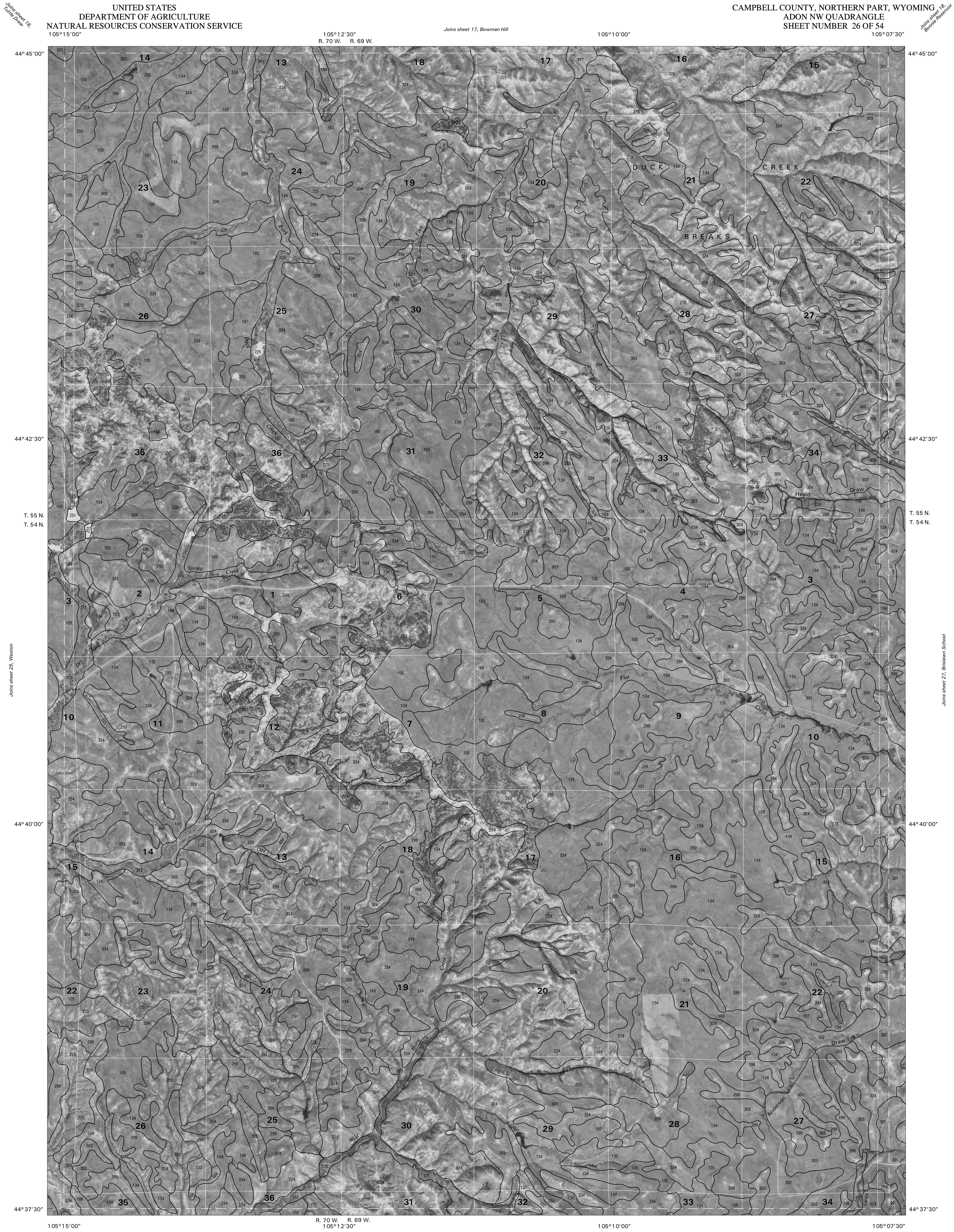
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

WESTON, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 25 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

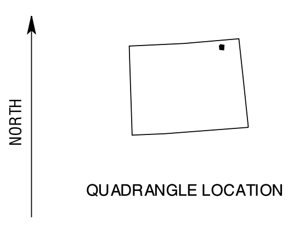
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
ADON NW QUADRANGLE
SHEET NUMBER 26 OF 54


Joins sheet 16, Turtle Draw
Joins sheet 17, Bowman Hill
Joins sheet 18, Bonnie Reservoir
Joins sheet 25, Weston
Joins sheet 27, Bristawn School
Joins sheet 34, Lone Tree Creek
Joins sheet 35, Adon
Joins sheet 36, Flag Butte
105°15′00″
105°12′30″
105°10′00″
105°07′30″
44°45′00″
44°42′30″
44°40′00″
44°37′30″
R. 70 W.
R. 69 W.
T. 55 N.
T. 54 N.
DUCK CREEK BREAKS
South Fork
West Fork
Duck Creek
Spring Creek
Dry Fork
Flat Creek
Heald Draw
Draw
Anderson
Wild Horse Creek
Canoy
14
13
18
17
16
15
23
24
19
20
21
22
26
25
30
29
28
27
35
36
31
32
33
34
3
2
1
6
5
4
3
10
11
12
7
8
9
10
14
15
13
18
17
16
15
22
23
24
19
20
21
22
26
25
30
29
28
27
35
36
31
32
33
34

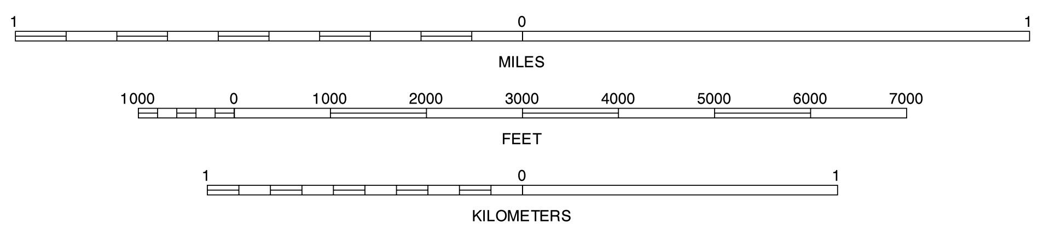
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000

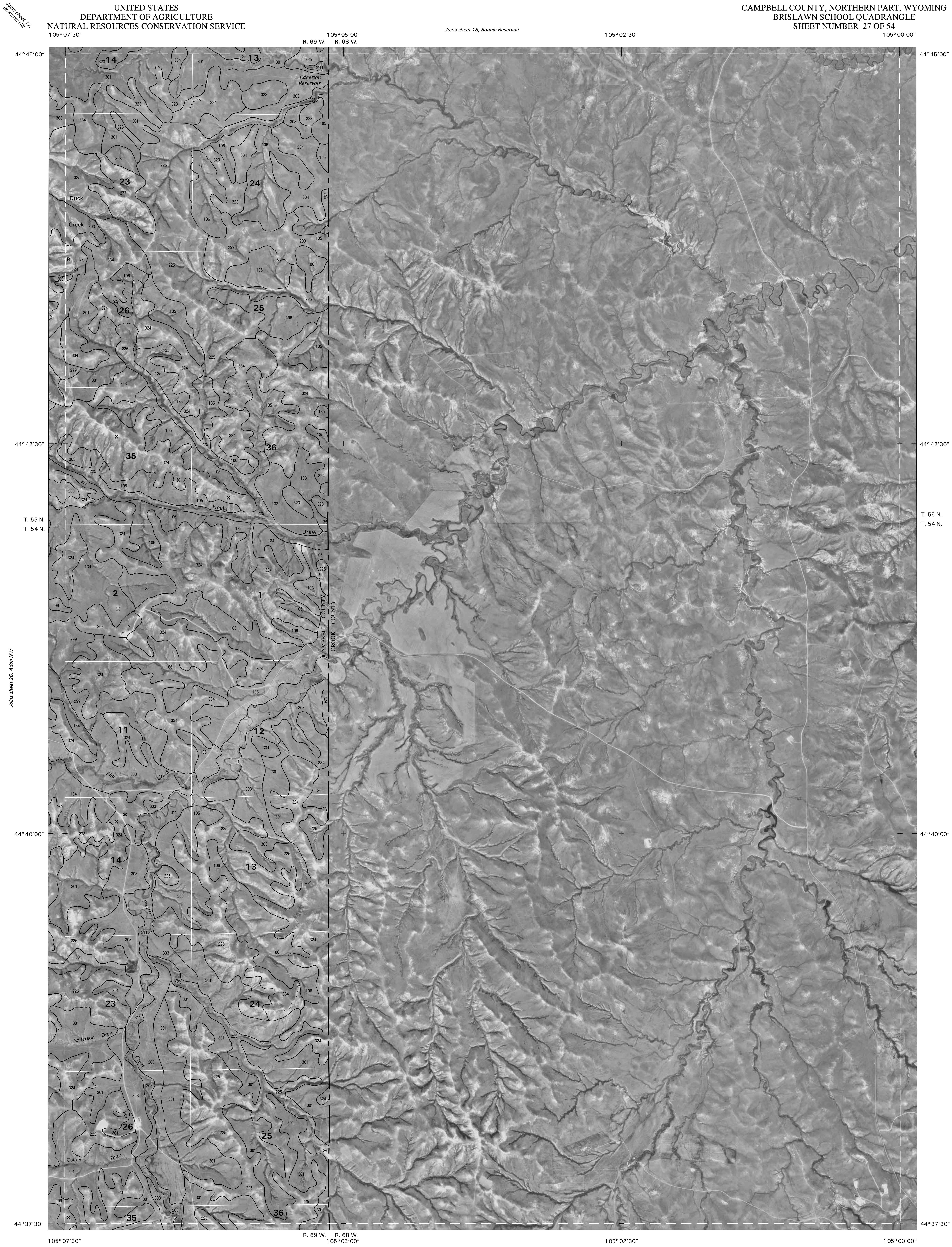

1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

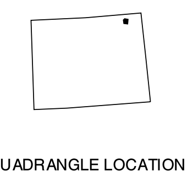
ADON NW, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 26 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
BRISLAWN SCHOOL QUADRANGLE
SHEET NUMBER 27 OF 54


Joins sheet 17, Bowman Hill
Joins sheet 18, Bonnie Reservoir
Joins sheet 26, Adon NW
Joins sheet 36, Flag Butte
105° 07′30″
105° 05′00″
105° 02′30″
105° 00′00″
44° 45′00″
44° 42′30″
44° 40′00″
44° 37′30″
R. 69 W.
R. 68 W.
T. 55 N.
T. 54 N.
CAMPBELL COUNTY
CROOK COUNTY
Edgerton Reservoir
Duck
Creek
Breaks
Heald
Draw
Flat
Creek
Prairie
Anderson
Draw
Creek
Calfoy
Draw
14
13
23
24
26
25
35
36
2
1
11
12
14
13
23
24
26
25
35
36


QUADRANGLE LOCATION
NORTH

Joins sheet 35, Adon

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

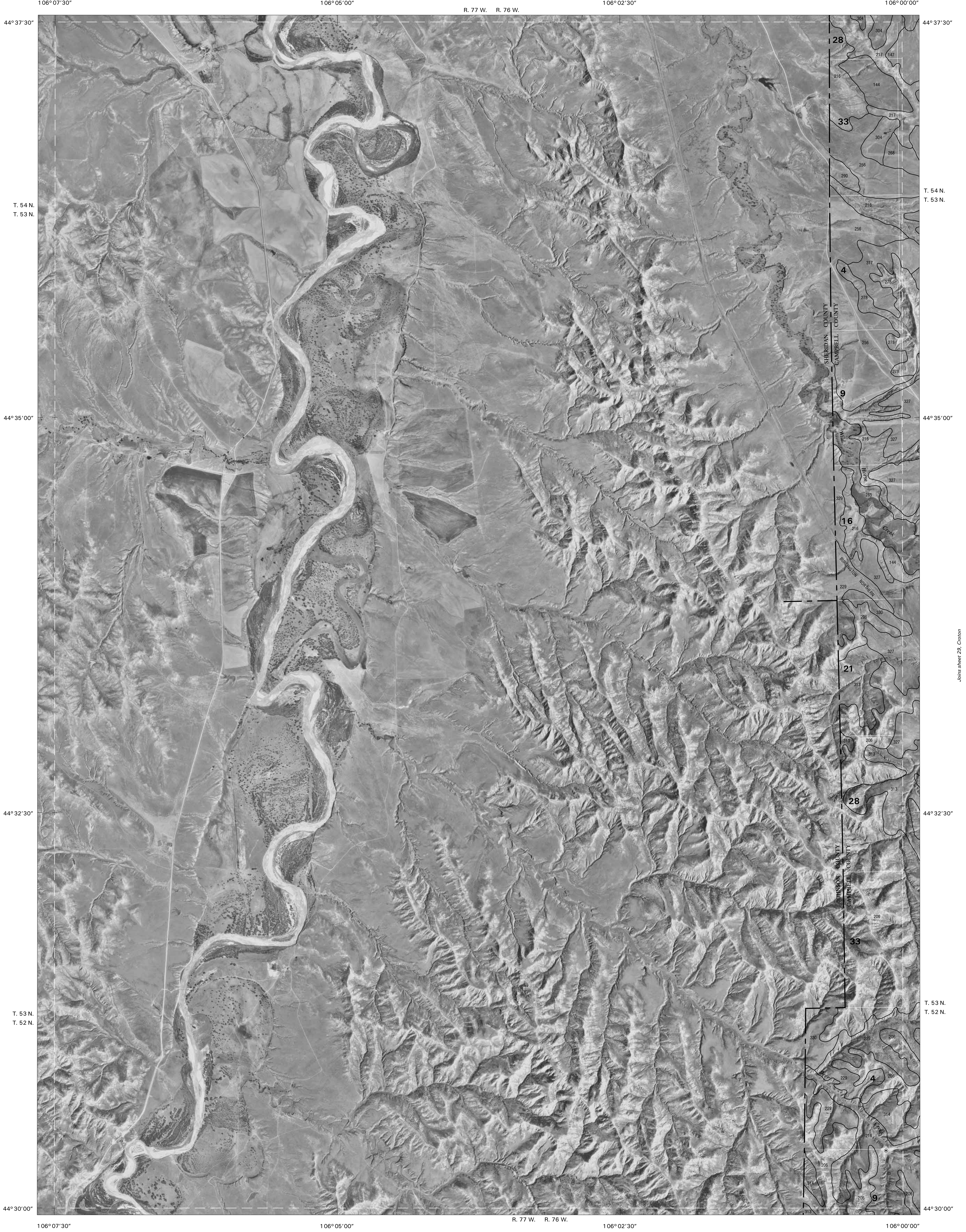
BRISLAWN SCHOOL, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 27 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
LARIAT QUADRANGLE
SHEET NUMBER 28 OF 54

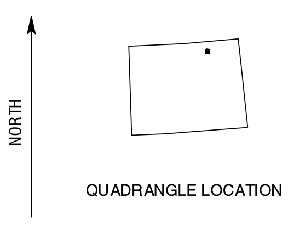
Joins sheet 20, Larey Draw



106° 07′30″
106° 05′00″
Joins sheet 19, Arvada NE
R. 77 W.
R. 76 W.
106° 02′30″
106° 00′00″
44° 37′30″
44° 35′00″
44° 32′30″
44° 30′00″
T. 54 N.
T. 53 N.
T. 52 N.
SHERIDAN COUNTY
CAMPBELL COUNTY
JOHNSON COUNTY
BURLINGTON NORTHERN
Wild Horse Creek
Joins sheet 29, Croton
Joins sheet 37, Livingston Draw
28
33
4
9
16
21
304
217
147
216
144
268
256
290
317
278
327
283
329
229
330
313
206
314
228

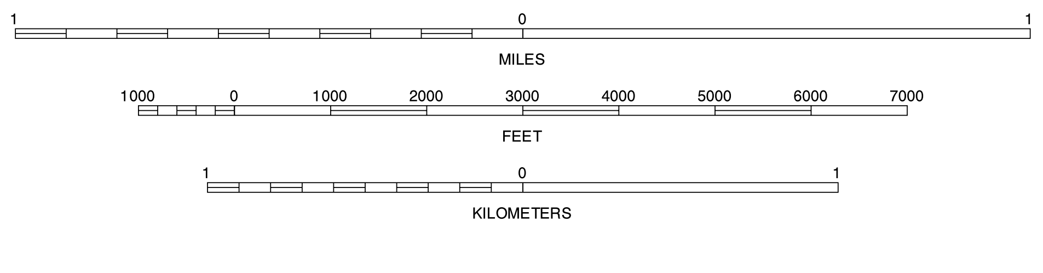
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000



1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

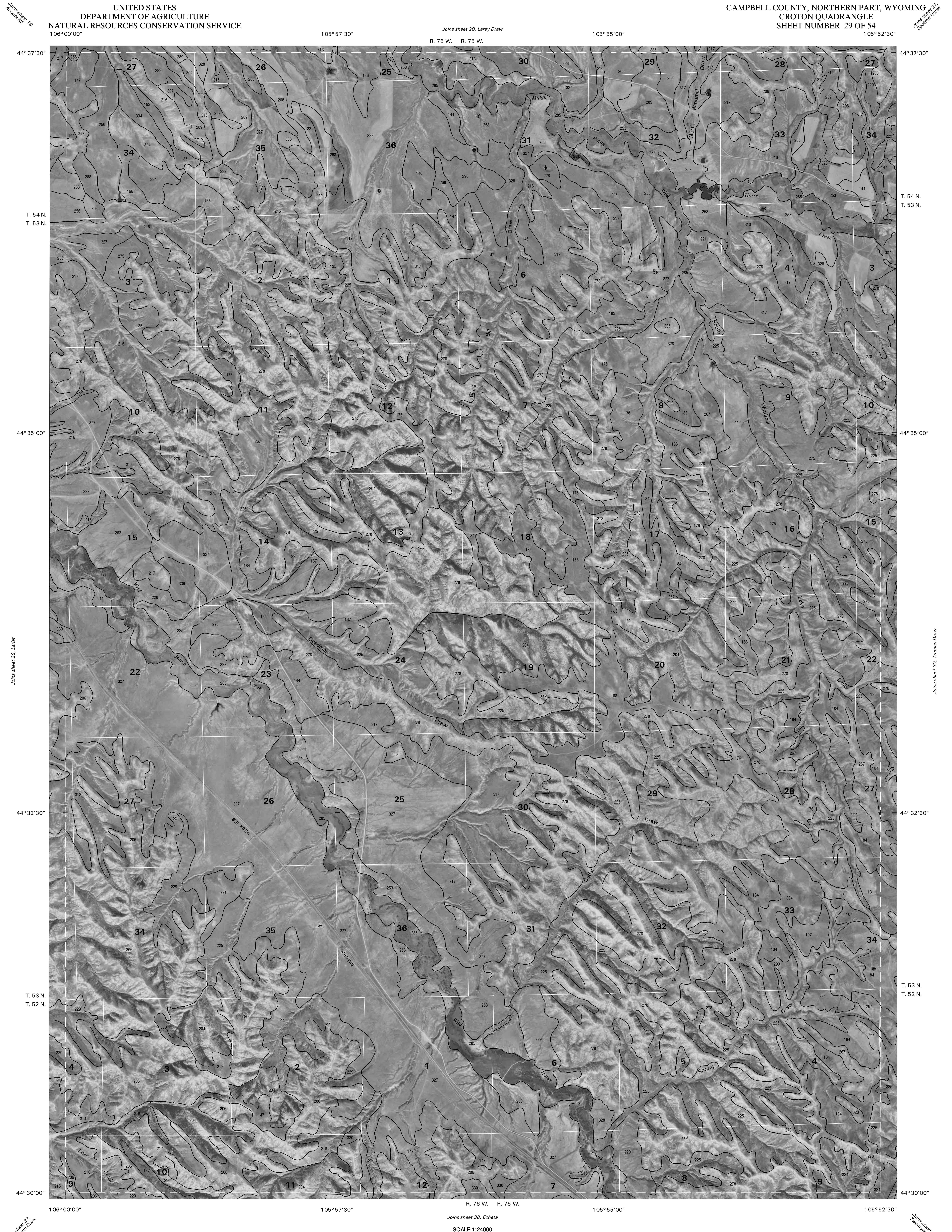
LARIAT, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 28 OF 54

Joins sheet 38, Echeta

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

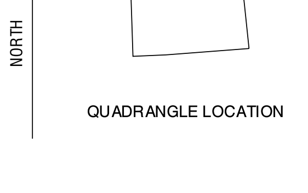
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
CROTON QUADRANGLE
SHEET NUMBER 29 OF 54


Joins sheet 19, Arvada NE
Joins sheet 20, Larey Draw
Joins sheet 21, Spotted Horse
Joins sheet 28, Lariat
Joins sheet 30, Truman Draw
Joins sheet 37, Livingston Draw
Joins sheet 38, Echeta
Joins sheet 39, Twentymile Butte
106° 00′00″
105° 57′30″
105° 55′00″
105° 52′30″
44° 37′30″
44° 35′00″
44° 32′30″
44° 30′00″
R. 76 W.
R. 75 W.
T. 54 N.
T. 53 N.
T. 52 N.
Middle
Prong
Wild
Horse
Creek
North
Windmill
Draw
South
Black
Draw
Windmill
Draw
Deadman
Draw
Lake
Draw
Spring
Draw
Cedar
Deer
Creek
BURLINGTON
NORTHERN

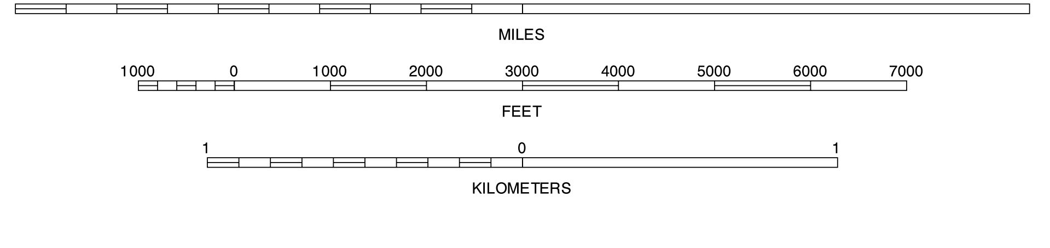
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

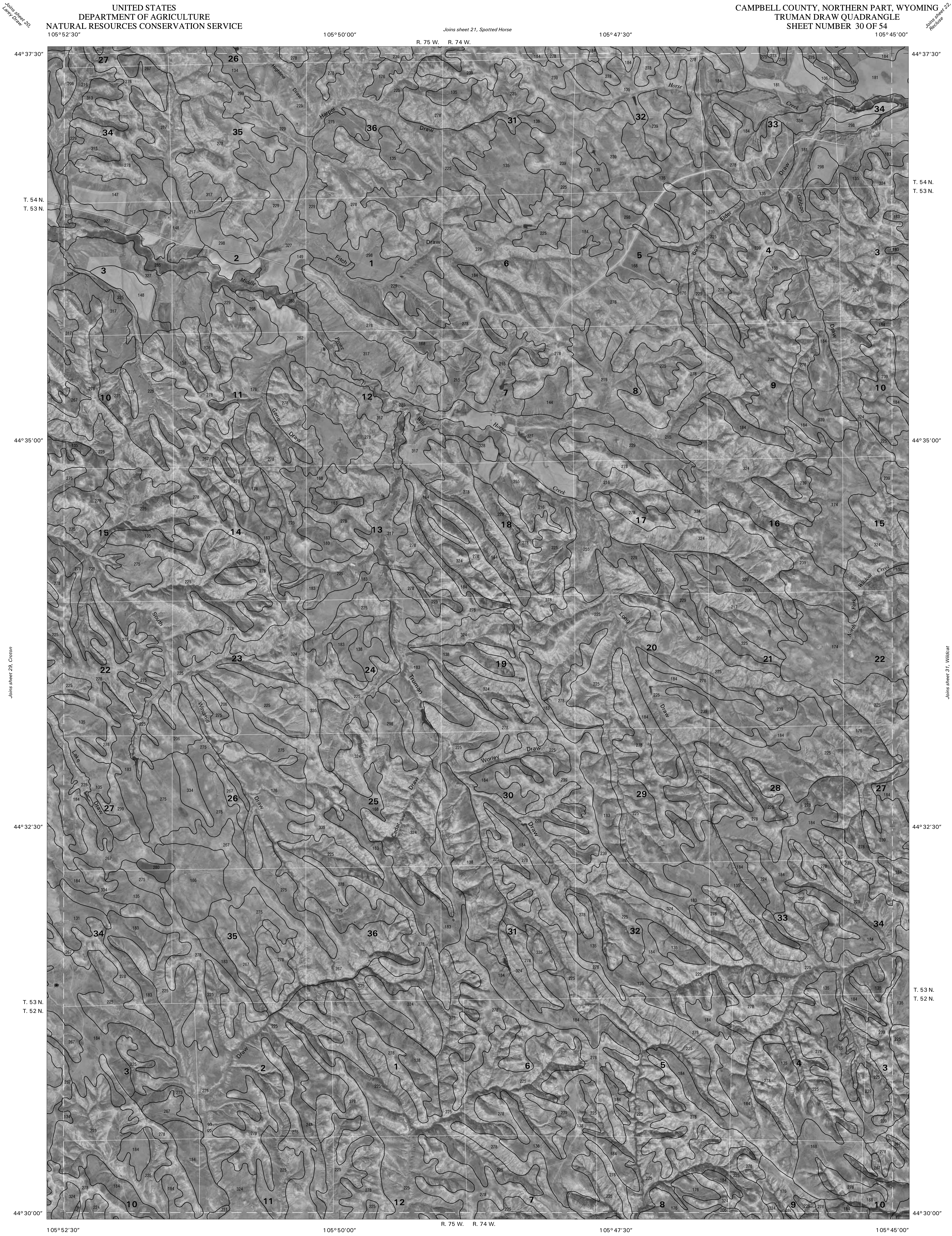
CROTON, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 29 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

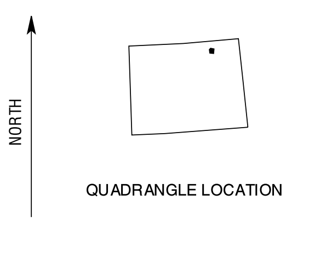
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
TRUMAN DRAW QUADRANGLE
SHEET NUMBER 30 OF 54

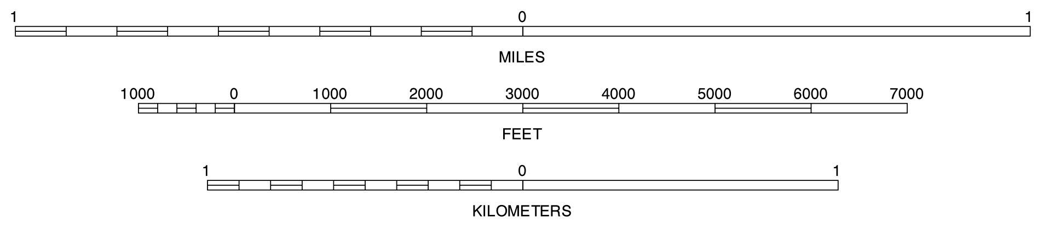

Joins sheet 20, Larey Draw
Joins sheet 21, Spotted Horse
Joins sheet 22, Recluse
105° 52′30″
105° 50′00″
105° 47′30″
105° 45′00″
R. 75 W.
R. 74 W.
44° 37′30″
44° 35′00″
44° 32′30″
44° 30′00″
T. 54 N.
T. 53 N.
T. 52 N.
Joins sheet 29, Croton
Joins sheet 31, Wildcat
Highline Draw
Harper Draw
Horse Creek
Elder Draw
Gibson Draw
Box Elder
Middle
Finch Draw
Pond
Camp Draw
Wild Horse Creek
Long Draw
Wildcat Creek
North Fork
South
Windmill
Truman
Worley Draw
Lake Draw
Cedar Draw
Joins sheet 38, Echeta
Joins sheet 39, Twentymile Butte
Joins sheet 40, Oriva NW

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

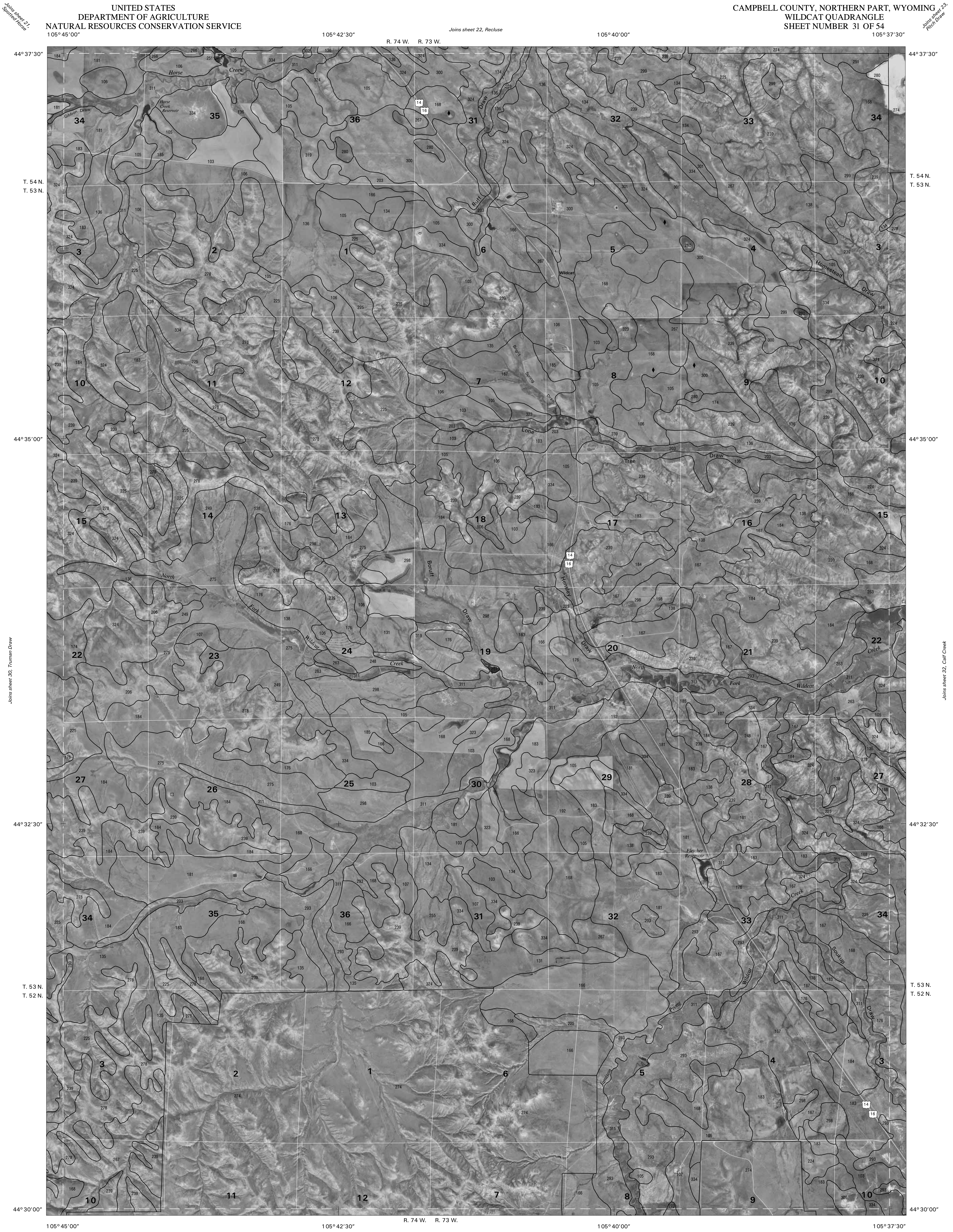
TRUMAN DRAW, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 30 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

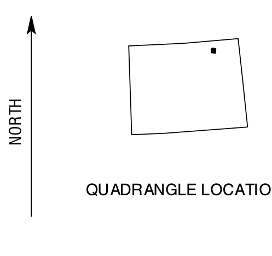
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
WILDCAT QUADRANGLE
SHEET NUMBER 31 OF 54

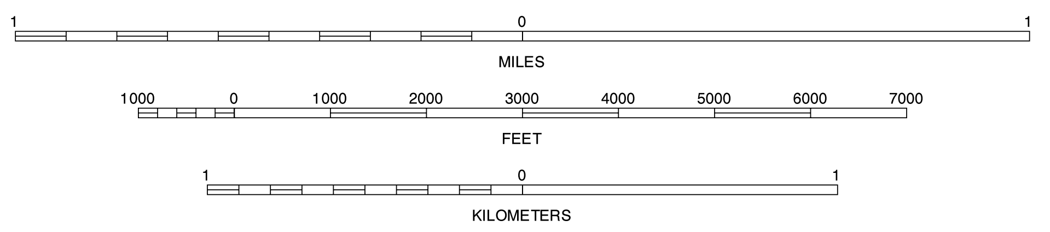

Joins sheet 21, Spotted Horse
Joins sheet 22, Recluse
Joins sheet 23, Pitch Draw
Joins sheet 30, Truman Draw
Joins sheet 32, Calf Creek
Joins sheet 39, Twentymile Butte
Joins sheet 40, Oriva NW
Joins sheet 41, Rawhide School
105° 45′00″
105° 42′30″
105° 40′00″
105° 37′30″
44° 37′30″
44° 35′00″
44° 32′30″
44° 30′00″
R. 74 W.
R. 73 W.
T. 54 N.
T. 53 N.
T. 52 N.
Horse Creek
Horse Creek Reservoir
Gibson Draw
Butt Draw
Wildcat
Homestead Draw
Lone Tree Draw
Bogus Spring Draw
North Fork Wildcat Creek
Bonoff Draw
Hensley Draw
Fletcher Reservoir
Wildcat Creek
Soukup Draw
Jones Draw
14
16
34
35
36
31
32
33
3
2
1
6
5
4
10
11
12
7
8
9
15
14
13
18
17
16
22
23
24
19
20
21
27
26
25
30
29
28

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000

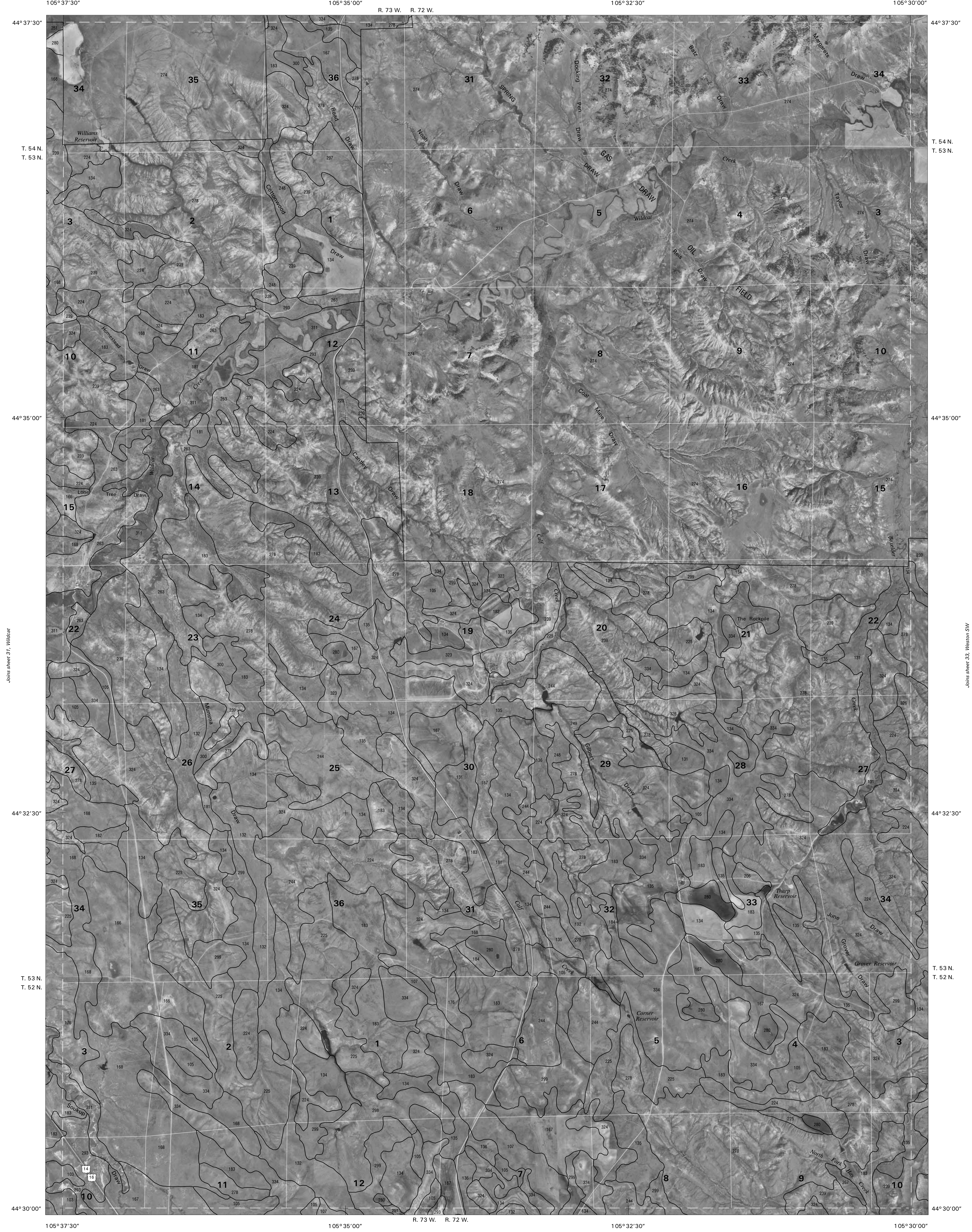

1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

WILDCAT, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 31 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

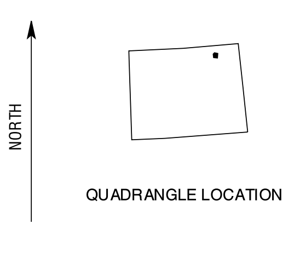
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
CALF CREEK QUADRANGLE
SHEET NUMBER 32 OF 54


Joins sheet 22, Recluse
Joins sheet 23, Pitch Draw
Joins sheet 24, Oliver Draw
Joins sheet 31, Wildcat
Joins sheet 33, Weston SW
Joins sheet 40, Oriva NW
Joins sheet 41, Rawhide School
Joins sheet 42, Moyer Springs
105° 37′30″
105° 35′00″
105° 32′30″
105° 30′00″
44° 37′30″
44° 35′00″
44° 32′30″
44° 30′00″
R. 73 W.
R. 72 W.
T. 54 N.
T. 53 N.
T. 52 N.
Williams Reservoir
Road Draw
Cottonwood Draw
Homestead Draw
Willow Creek
Lone Tree Draw
Cantley Draw
North Draw
SPRING GAS DRAW
Docking Pen Draw
Wildcat Creek
OIL FIELD
Reis Draw
Batz Draw
Margarets Draw
Taylor Draw
Coal Mine Draw
Calf Creek
Boxelder
The Rockpile
Gilbert Draw
Momma Draw
Tharp Reservoir
June Draw
Grover Draw
Grover Reservoir
Corner Reservoir
Soukup Draw
North Fork Hay Creek
14
16

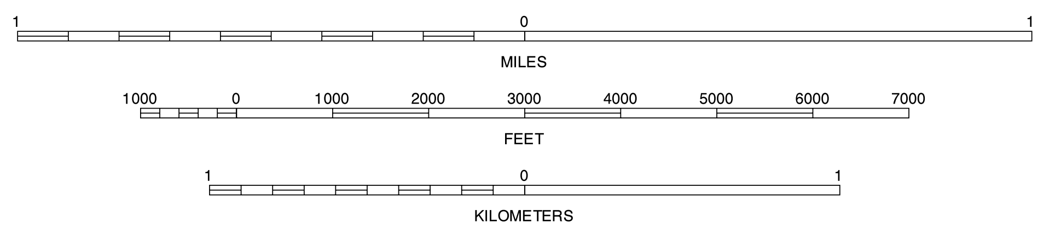
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

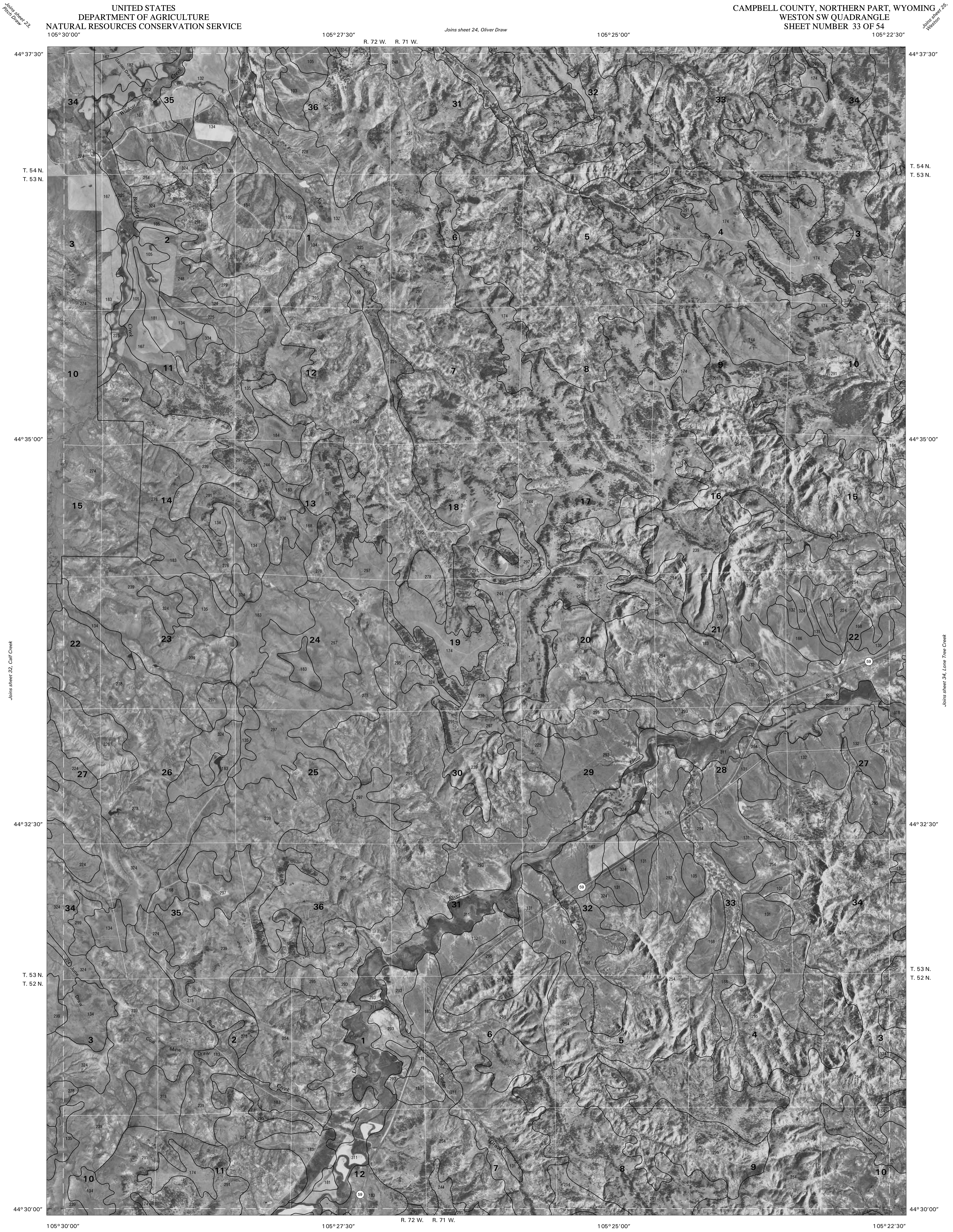
CALF CREEK, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 32 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

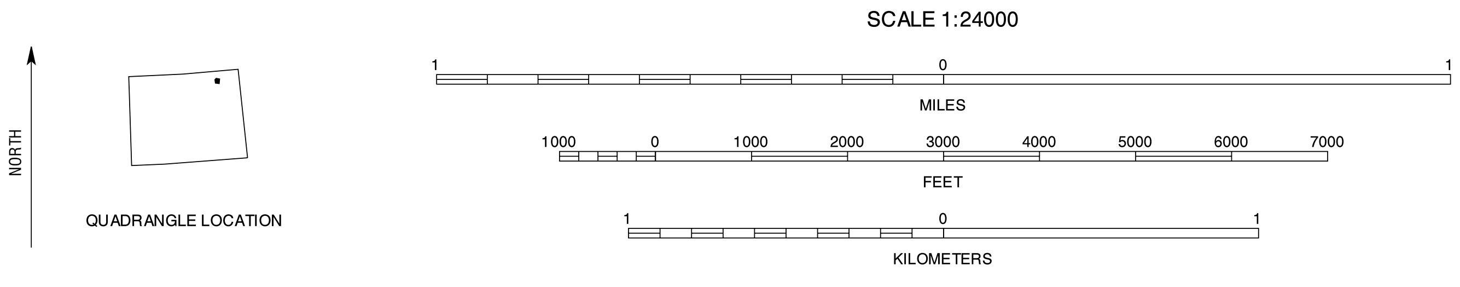
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
WESTON SW QUADRANGLE
SHEET NUMBER 33 OF 54


Joins sheet 23, Pitch Draw
Joins sheet 24, Oliver Draw
Joins sheet 25, Weston
Joins sheet 32, Calf Creek
Joins sheet 34, Lone Tree Creek
Joins sheet 41, Rawhide School
Joins sheet 42, Moyer Springs
Joins sheet 43, Green Hill
105° 30′00″
105° 27′30″
105° 25′00″
105° 22′30″
44° 37′30″
44° 35′00″
44° 32′30″
44° 30′00″
R. 72 W.
R. 71 W.
T. 54 N.
T. 53 N.
T. 52 N.
Garden Draw
Wildcat Creek
Logan Creek
Little Powder River
Coal Mine Draw
59
34
35
36
31
32
33
3
2
1
6
5
4
10
11
12
7
8
9
15
14
13
18
17
16
22
23
24
19
20
21
27
26
25
30
29
28

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

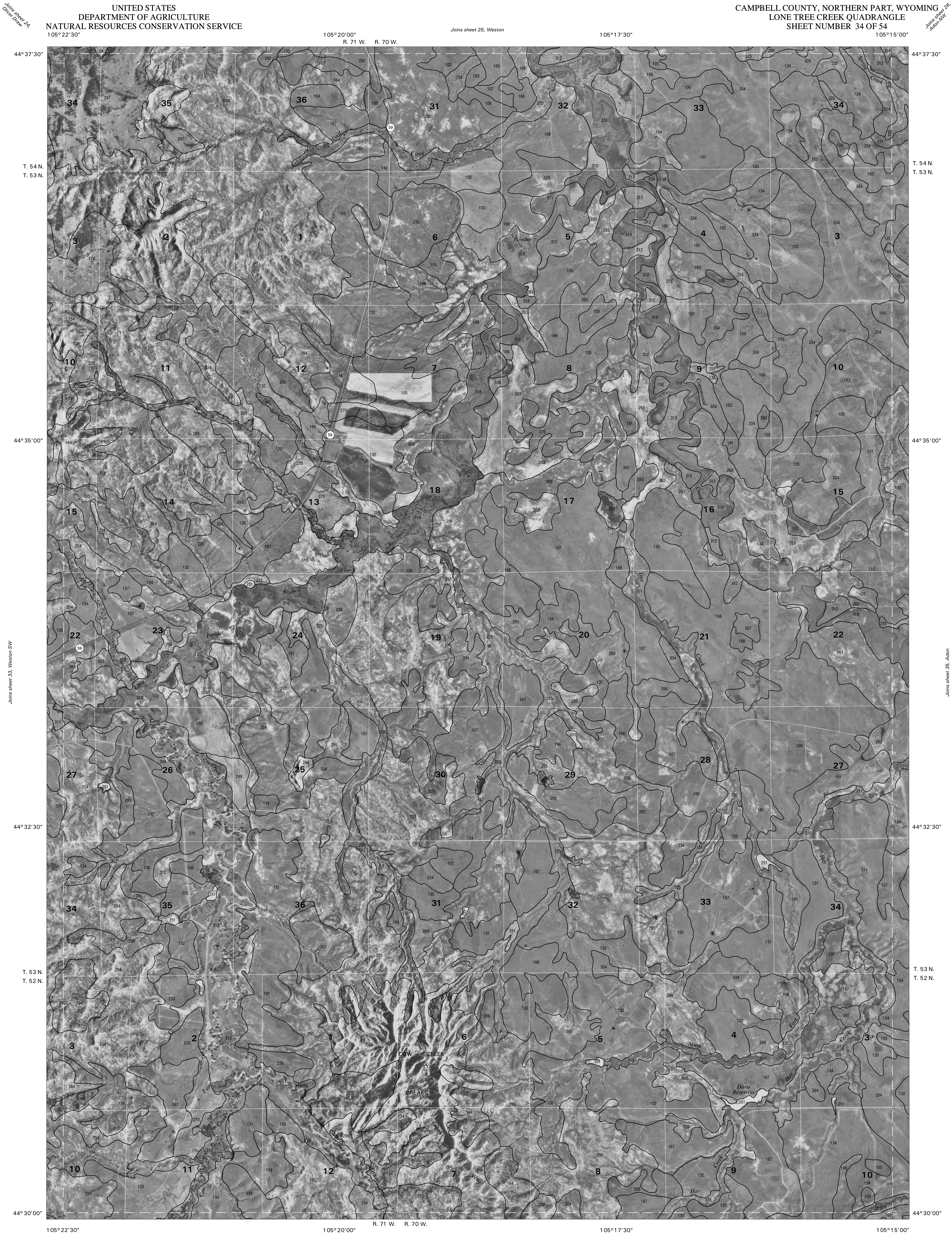
WESTON SW, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 33 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

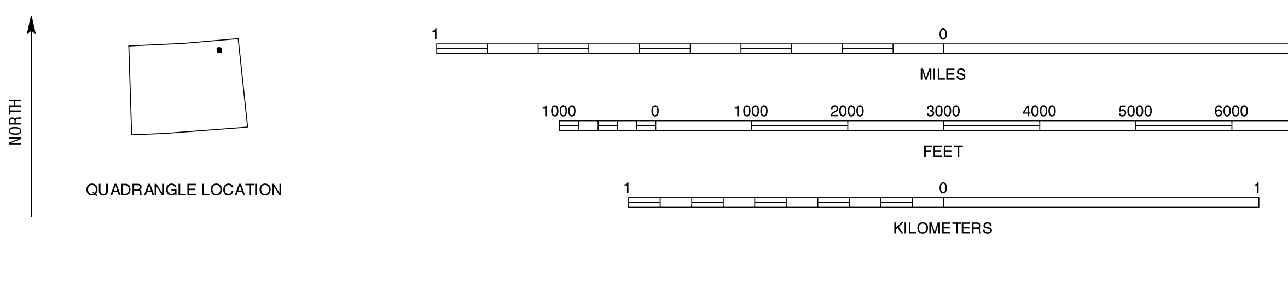
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
LONE TREE CREEK QUADRANGLE
SHEET NUMBER 34 OF 54


Joins sheet 24, Oliver Draw
Joins sheet 25, Weston
Joins sheet 26, Adon NW
105° 22′30″
105° 20′00″
105° 17′30″
105° 15′00″
R. 71 W.
R. 70 W.
44° 37′30″
44° 35′00″
44° 32′30″
44° 30′00″
T. 54 N.
T. 53 N.
T. 52 N.
Joins sheet 33, Weston SW
Joins sheet 35, Adon
Powder River
Little Powder River
Cottonwood Creek
Lone Tree Creek
Cow Creek
Spring Creek
Hay Creek
North Fork Hay Creek
Davis Reservoir
COW CREEK BREAKS
Wall Creek
Draw
Joins sheet 42, Moyer Springs
Joins sheet 43, Green Hill
Joins sheet 44, Rozet NW

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

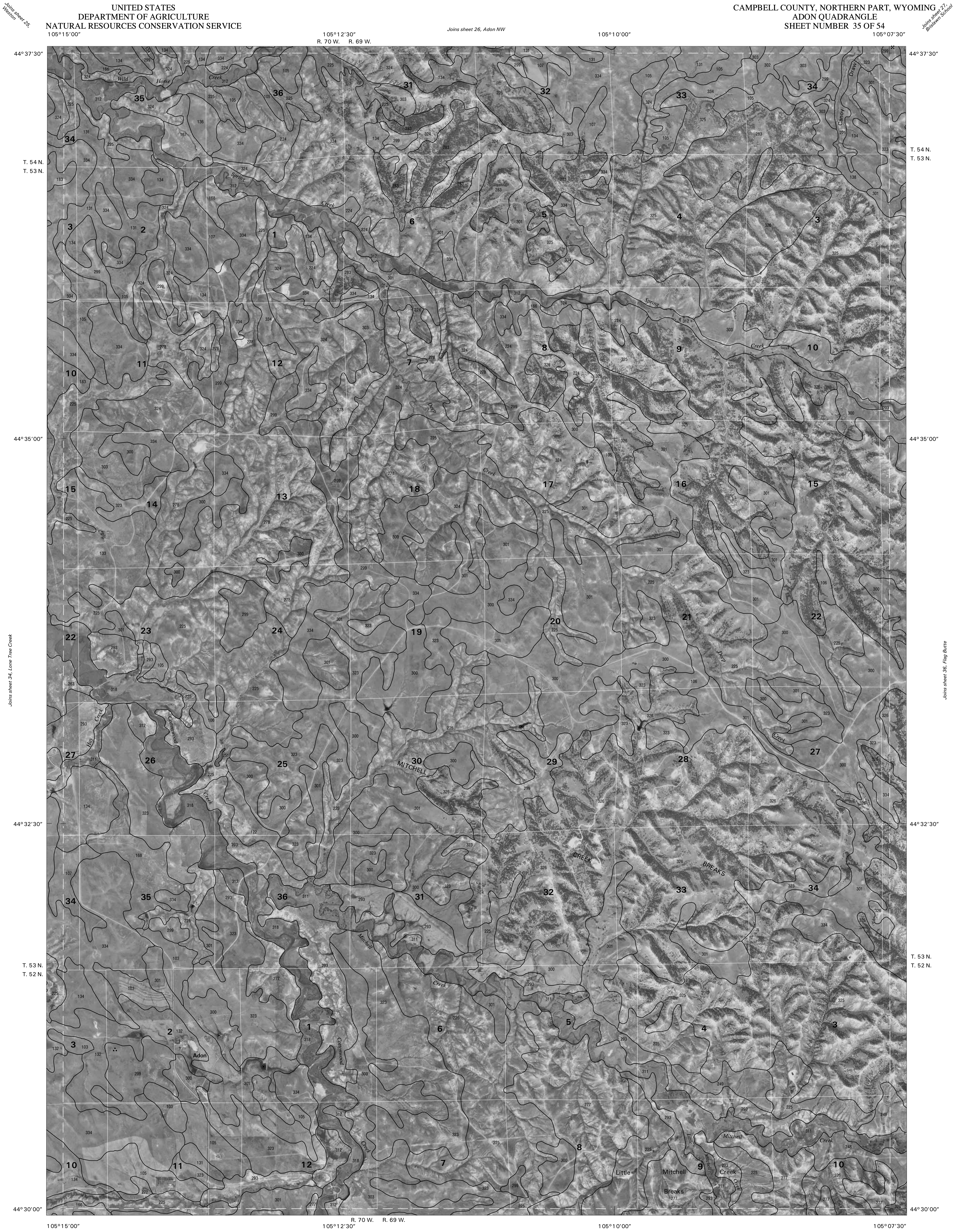

NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

LONE TREE CREEK, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 34 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

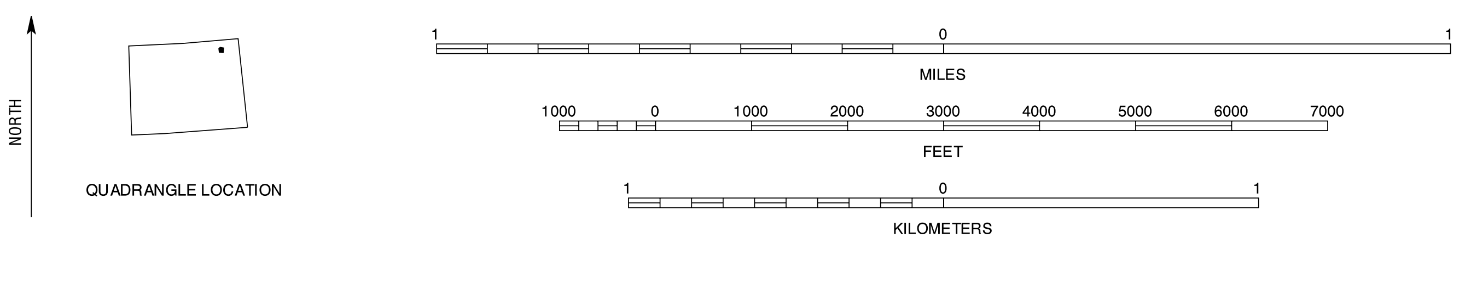
CAMPBELL COUNTY, NORTHERN PART, WYOMING
ADON QUADRANGLE
SHEET NUMBER 35 OF 54



Joins sheet 25, Weston
Joins sheet 26, Adon NW
Joins sheet 27, Birdseye School
105°15'00"
105°12'30"
R. 70 W.
R. 69 W.
105°10'00"
105°07'30"
44°37'30"
44°35'00"
44°32'30"
44°30'00"
T. 54 N.
T. 53 N.
T. 52 N.
Joins sheet 34, Lone Tree Creek
Joins sheet 36, Flag Butte
Wild Horse Creek
Spring Creek
Deep Creek
Cottonwood Creek
Hay Creek
Mitchell Creek
MITCHELL CREEK BREAKS
Canoy Draw
Adon
Little Mitchell Creek Breaks
Joins sheet 43, Green Hill
Joins sheet 44, Rozet NW
Joins sheet 45, Rozet NE

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

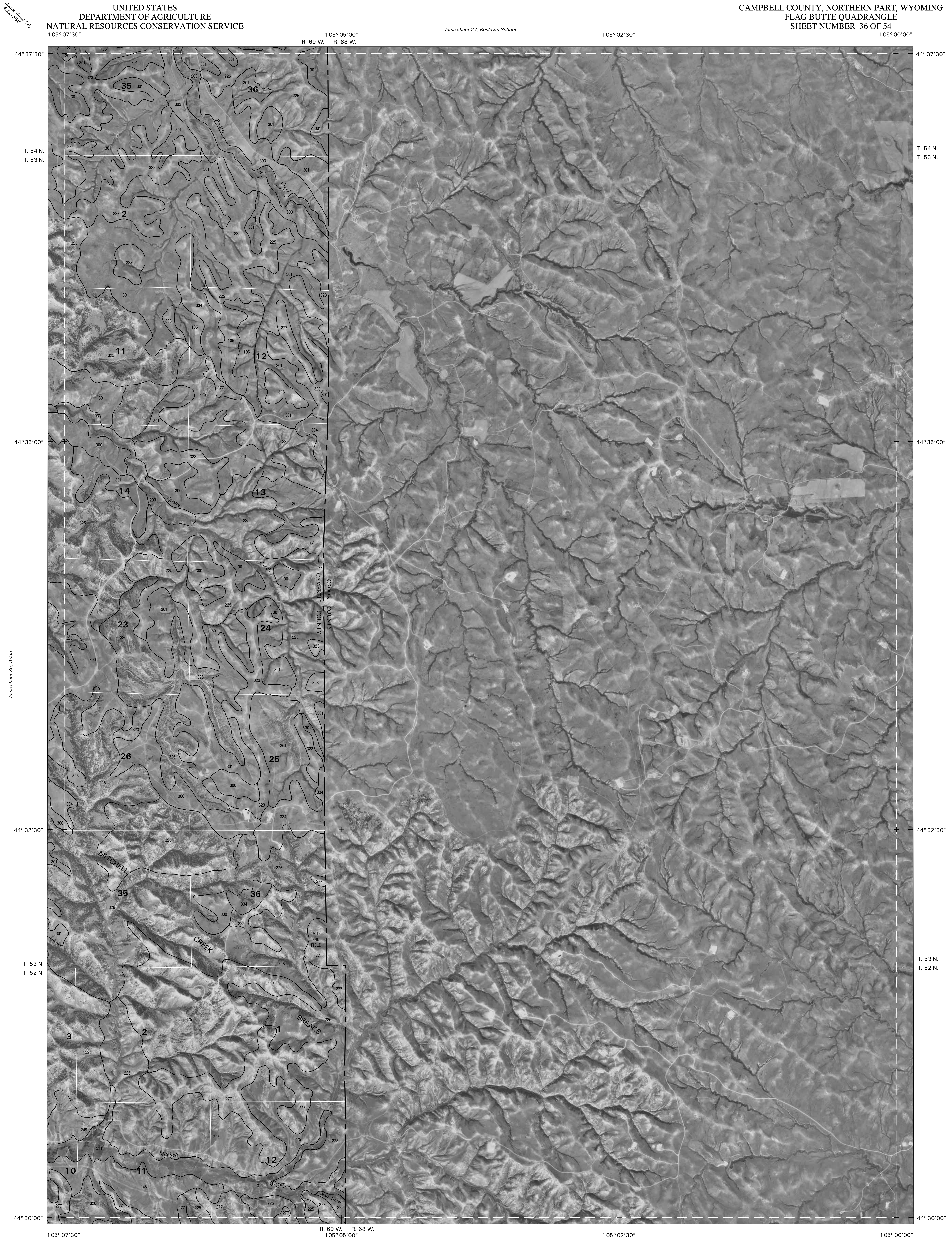
ADON, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 35 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

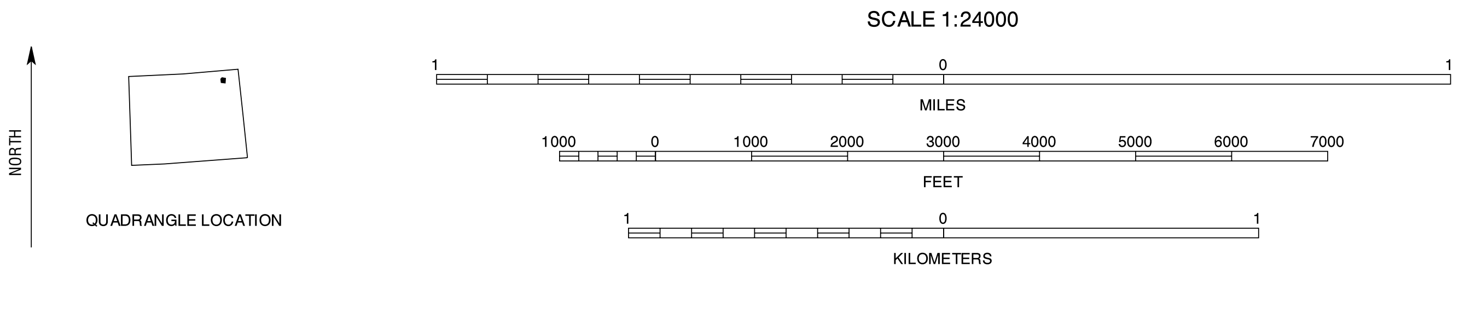
CAMPBELL COUNTY, NORTHERN PART, WYOMING
FLAG BUTTE QUADRANGLE
SHEET NUMBER 36 OF 54



Joins sheet 26, Adon NW
Joins sheet 27, Brislawn School
105° 07′30″
105° 05′00″
105° 02′30″
105° 00′00″
R. 69 W.
R. 68 W.
44° 37′30″
44° 35′00″
44° 32′30″
44° 30′00″
T. 54 N.
T. 53 N.
T. 52 N.
Joins sheet 35, Adon
35
36
2
1
11
12
14
13
23
24
26
25
35
36
3
2
1
10
11
12
Prairie
Creek
Spring
Creek
CAMPBELL COUNTY
CROOK COUNTY
MITCHELL
CREEK
BREAKS
Mitchell
Creek
Wolf Draw
M.D. OIL FIELD
301
303
323
325
225
277
300
326
334
106
248
311
Joins sheet 44, Rozet NW
Joins sheet 45, Rozet NE

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



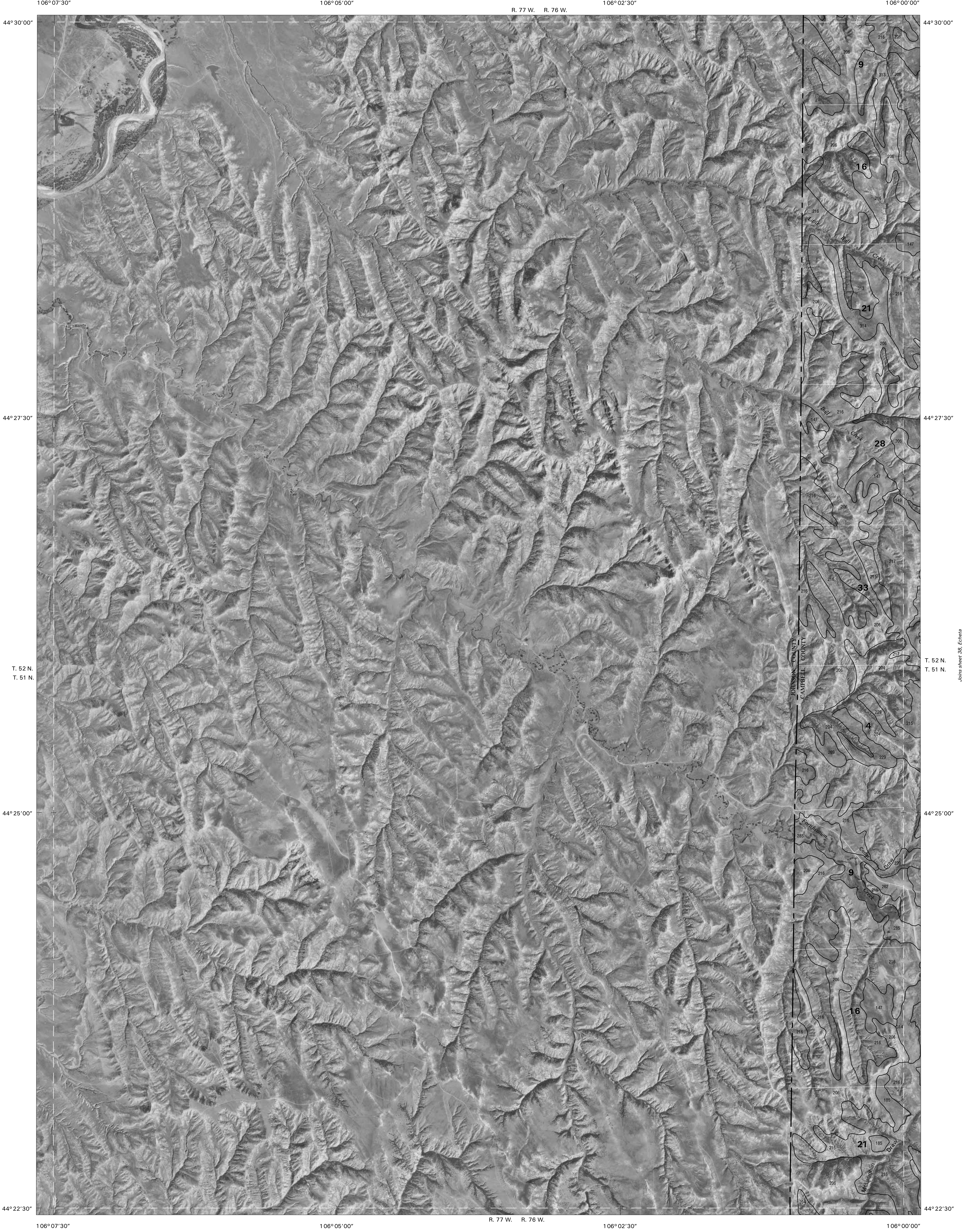
NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

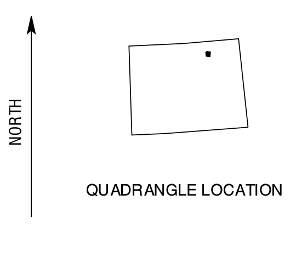
FLAG BUTTE, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 36 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

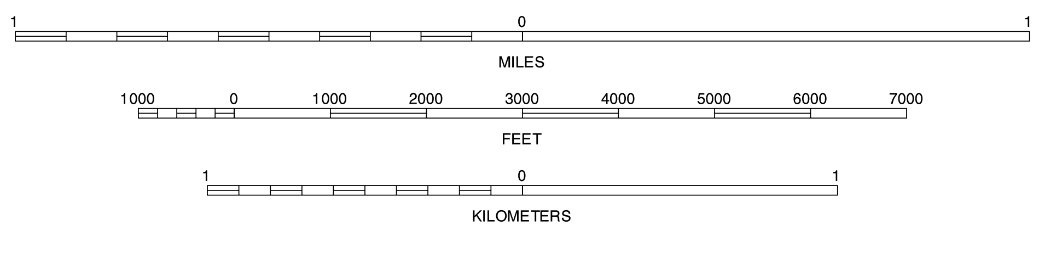
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
LIVINGSTON DRAW QUADRANGLE
SHEET NUMBER 37 OF 54


Joins sheet 28, Lariat
Joins sheet 29, Croton
Joins sheet 38, Echeta
Joins sheet 46, Somerville Flats East
Joins sheet 47, Carr Draw
106° 07'30"
106° 05'00"
106° 02'30"
106° 00'00"
44° 30'00"
44° 27'30"
44° 25'00"
44° 22'30"
R. 77 W.
R. 76 W.
T. 52 N.
T. 51 N.
JOHNSON COUNTY
CAMPBELL COUNTY
9
16
21
28
33
4
9
16
21
Little Bull Creek
Bull Creek
Fourmile Creek
Cedar Draw
McLaughlin Draw
147
185
204
206
212
214
215
216
217
228
229
285
313
314


NORTH
QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

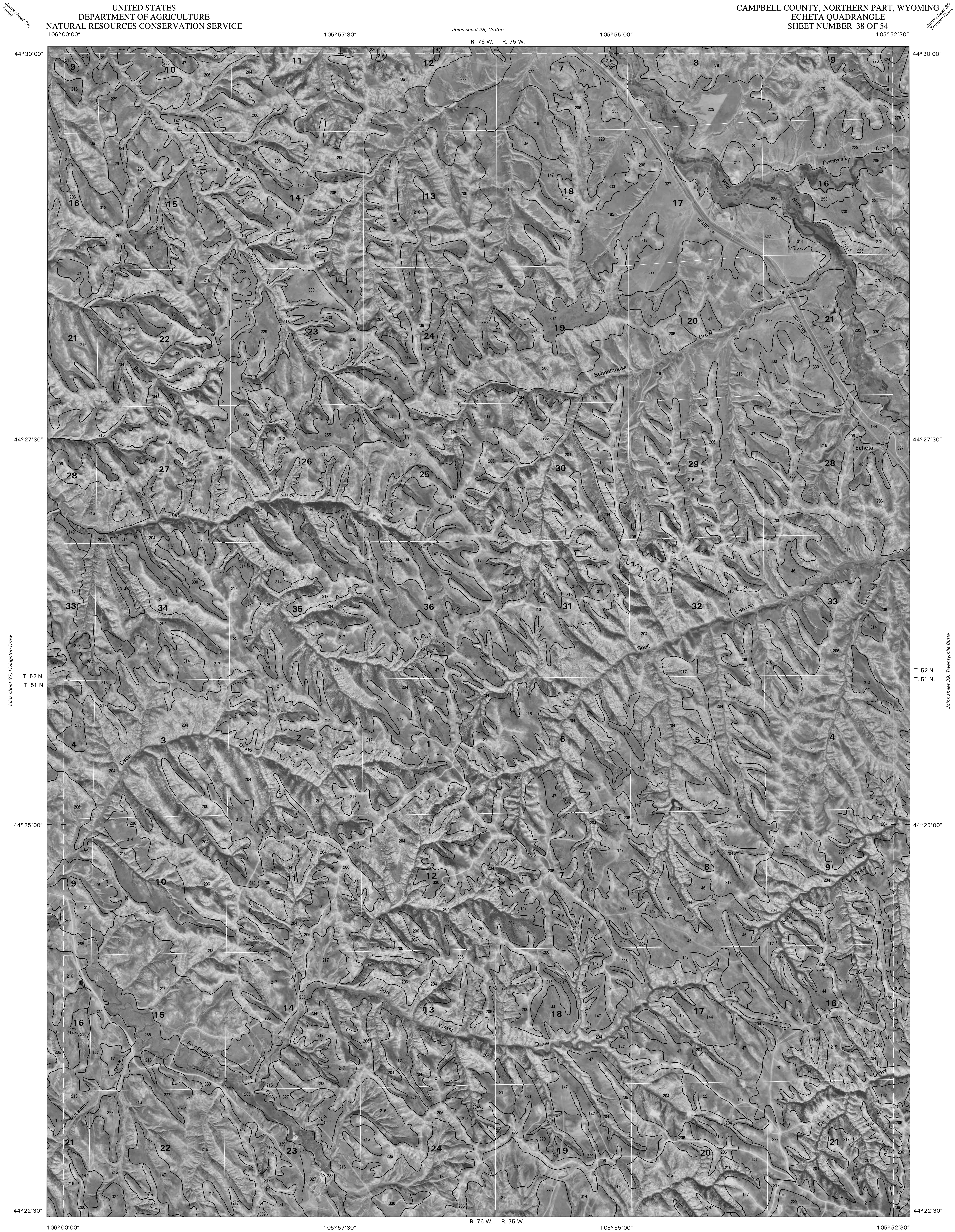
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

LIVINGSTON DRAW, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 37 OF 54

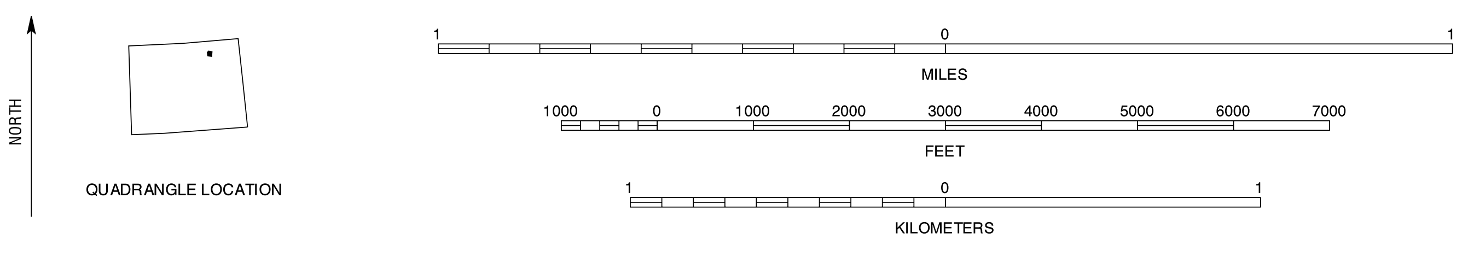
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
ECHETA QUADRANGLE
SHEET NUMBER 38 OF 54


Joins sheet 28, Lariat
Joins sheet 29, Croton
Joins sheet 30, Truman Draw
106°00'00"
105°57'30"
105°55'00"
105°52'30"
R. 76 W.
R. 75 W.
44°30'00"
44°27'30"
44°25'00"
44°22'30"
T. 52 N.
T. 51 N.
Joins sheet 37, Livingston Draw
Joins sheet 39, Twentymile Butte
Echeta
Schoolhouse Draw
Snell Canyon
Bull Creek
Cedar Draw
Soft Water Draw
Twentymile Creek
Wild Horse Creek
Burlington Northern
Joins sheet 46, Somerville Flats East
Joins sheet 47, Carr Draw
Joins sheet 48, Jeffers Draw

SCALE 1:24000


NORTH
QUADRANGLE LOCATION
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

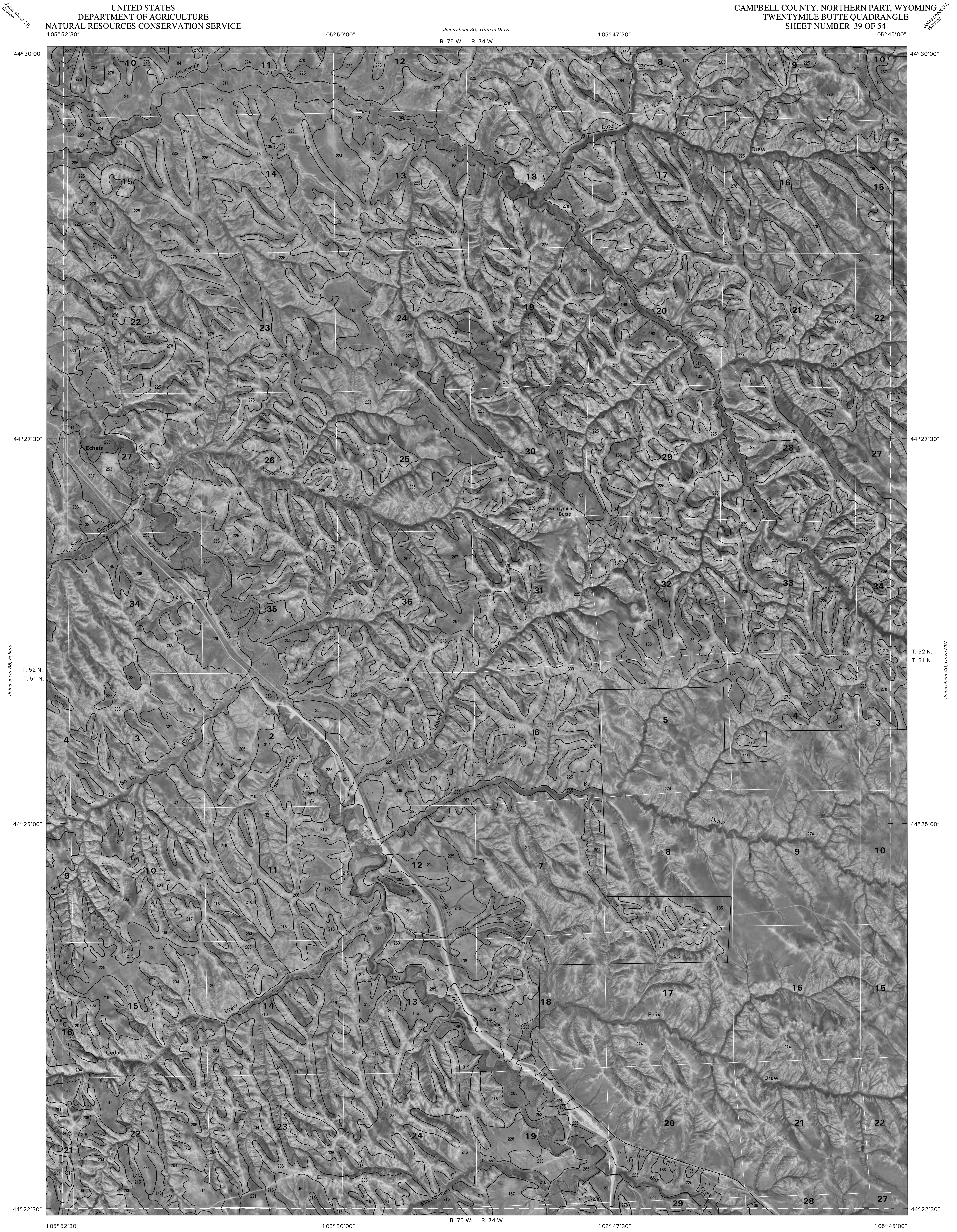
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

ECHETA, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 38 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

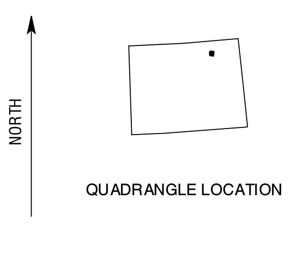
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
TWENTYMILE BUTTE QUADRANGLE
SHEET NUMBER 39 OF 54

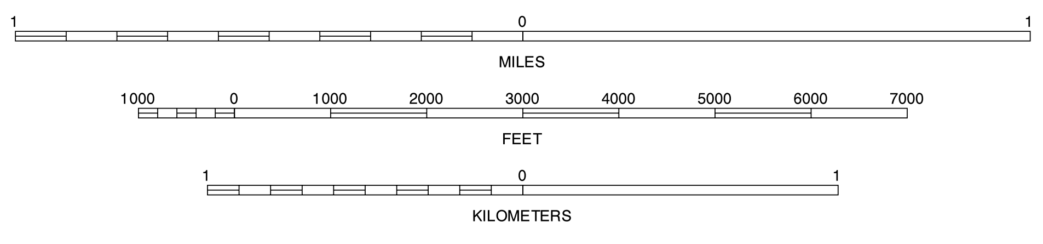

Joins sheet 29, Croton
Joins sheet 30, Truman Draw
Joins sheet 31, Wildcat
Joins sheet 38, Echeta
Joins sheet 40, Oriva NW
Joins sheet 47, Carr Draw
Joins sheet 48, Jeffers Draw
Joins sheet 49, Oriva
105° 52′30″
105° 50′00″
105° 47′30″
105° 45′00″
44° 30′00″
44° 27′30″
44° 25′00″
44° 22′30″
R. 75 W.
R. 74 W.
T. 52 N.
T. 51 N.
Twentymile Creek
Eaton
Echeta
Wild Horse Creek
Rough Creek
Twentymile Butte
Small Canyon
Scotty Draw
Barker Draw
Felix Draw
Cedar Draw
Montgomery Draw
Hay Creek

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000

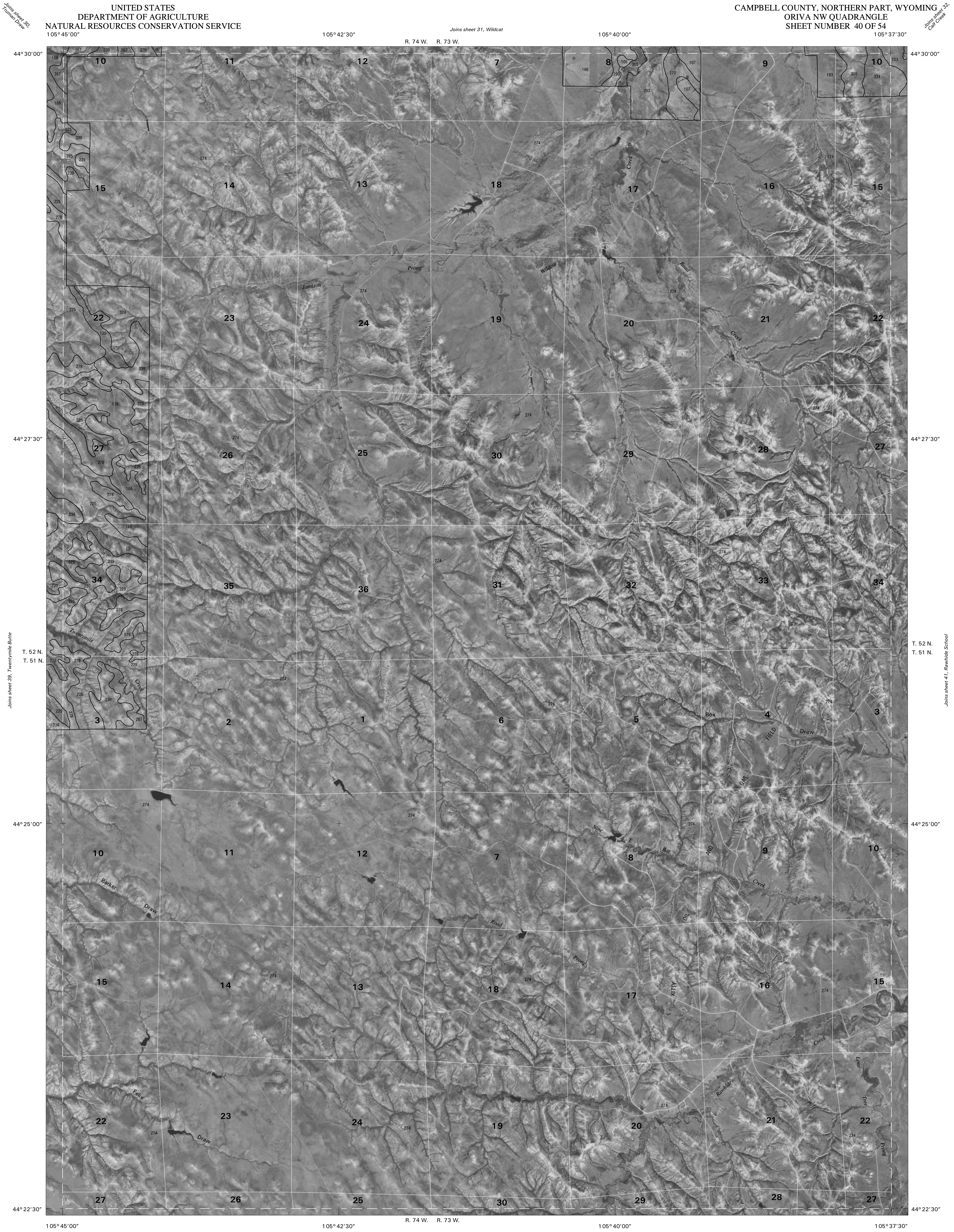

1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

TWENTYMILE BUTTE, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 39 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

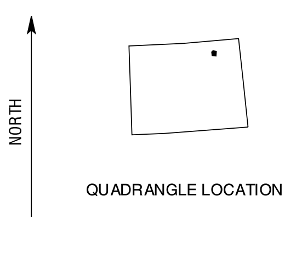
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
ORIVA NW QUADRANGLE
SHEET NUMBER 40 OF 54


Joins sheet 30, Truman Draw
Joins sheet 31, Wildcat
Joins sheet 32, Calf Creek
Joins sheet 39, Twentymile Butte
Joins sheet 41, Rawhide School
Joins sheet 48, Jeffers Draw
Joins sheet 49, Oriva
Joins sheet 50, Gillette West
105° 45′00″
105° 42′30″
105° 40′00″
105° 37′30″
44° 30′00″
44° 27′30″
44° 25′00″
44° 22′30″
R. 74 W.
R. 73 W.
T. 52 N.
T. 51 N.
Jamison
Prong
Wildcat
Creek
Road
Twentymile
Creek
Box
Draw
FIELD
GAS
AND
OIL
KITTY
Nine
Mile
Barker
Draw
Road
Prong
Creek
Rawhide
Lone
Tree
Prong
Fairx
Draw
274

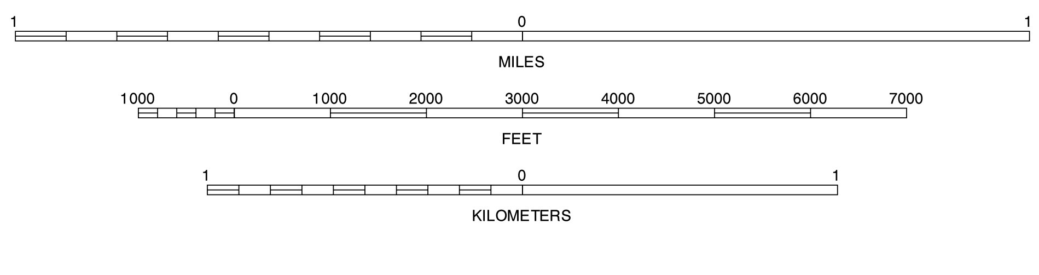
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

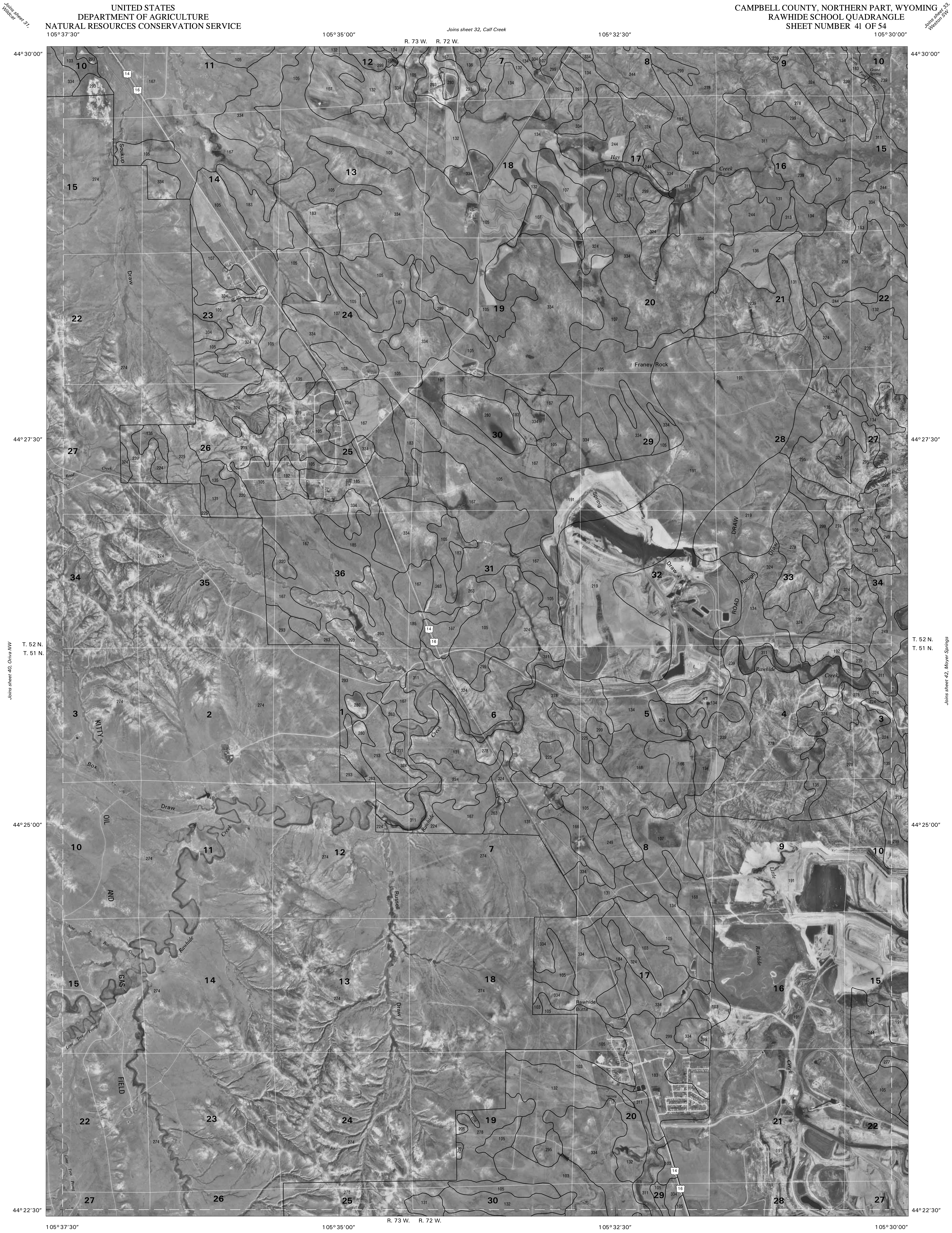
ORIVA NW, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 40 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

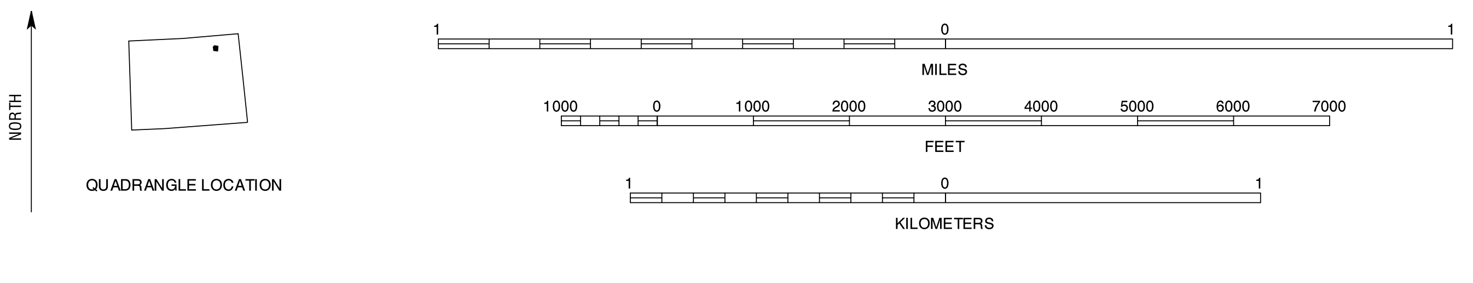
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
RAWHIDE SCHOOL QUADRANGLE
SHEET NUMBER 41 OF 54


Joins sheet 31, Wildcat
Joins sheet 32, Calf Creek
Joins sheet 33, Weston SW
Joins sheet 40, Oriva NW
Joins sheet 42, Moyer Springs
Joins sheet 49, Oriva
Joins sheet 50, Gillette West
Joins sheet 51, Gillette East
105° 37′30″
105° 35′00″
105° 32′30″
105° 30′00″
44° 30′00″
44° 27′30″
44° 25′00″
44° 22′30″
R. 73 W.
R. 72 W.
T. 52 N.
T. 51 N.
Soukup
Draw
Hay
Creek
Franey Rock
Spring
Draw
Rough
DRAW
ROAD
Rawhide
Creek
KITTY
Box
Draw
OIL
AND
GAS
FIELD
Russell
Draw
Rawhide
Butte
Little
Rawhide
Creek
Lone
Tree
Prong

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

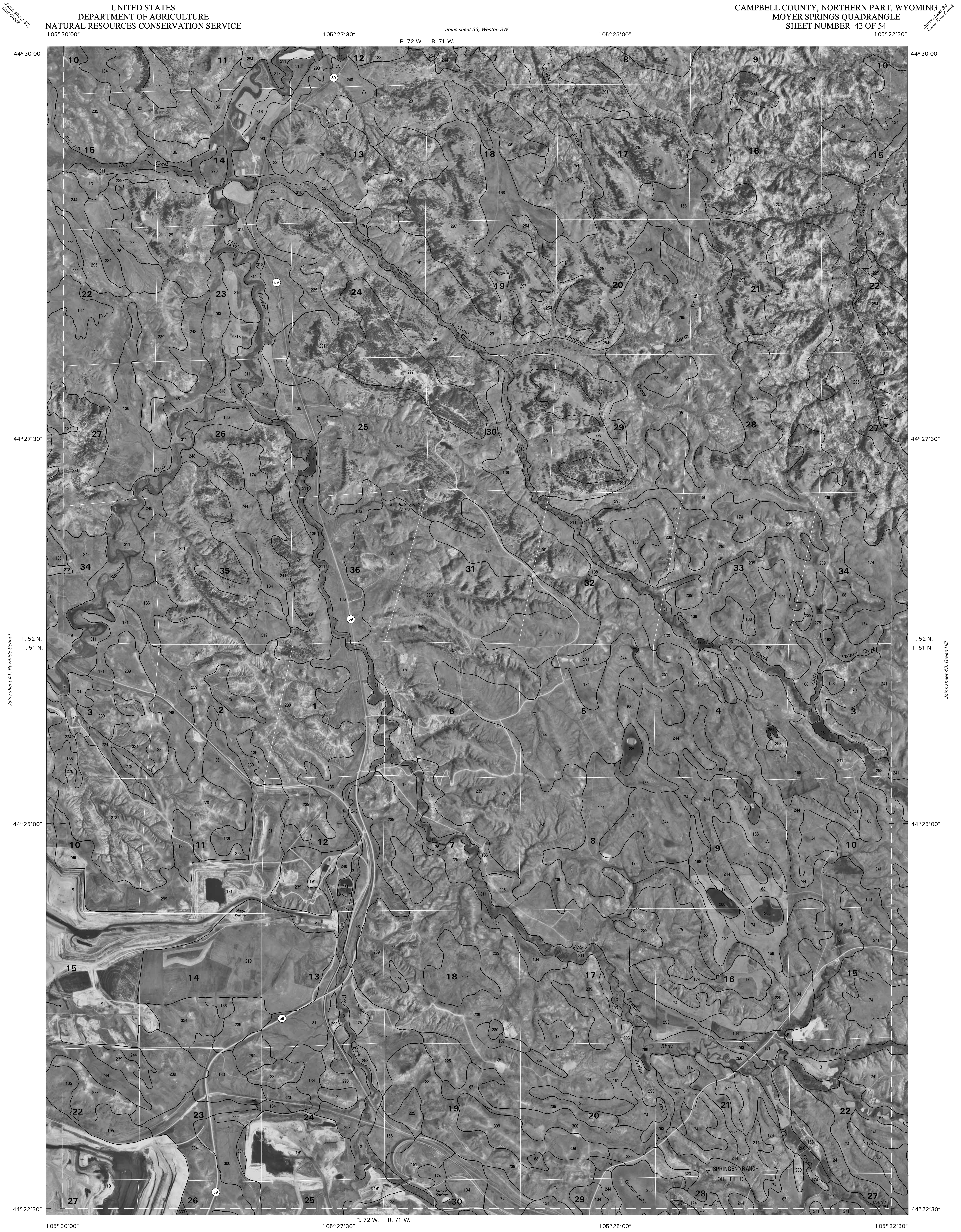
RAWHIDE SCHOOL, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 41 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

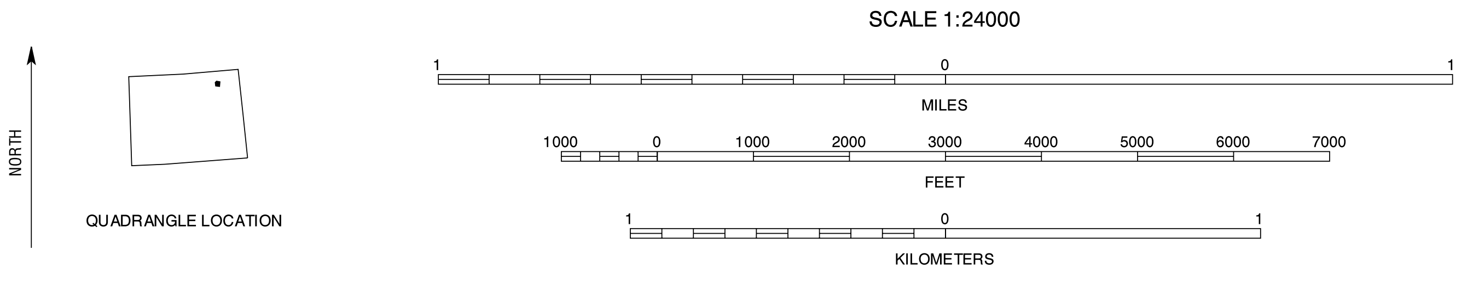
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
MOYER SPRINGS QUADRANGLE
SHEET NUMBER 42 OF 54


Joins sheet 32, Calf Creek
Joins sheet 33, Weston SW
Joins sheet 34, Lone Tree Creek
105° 30′00″
105° 27′30″
105° 25′00″
105° 22′30″
44° 30′00″
44° 27′30″
44° 25′00″
44° 22′30″
R. 72 W.
R. 71 W.
T. 52 N.
T. 51 N.
Joins sheet 41, Rawhide School
Joins sheet 43, Green Hill
Hay Creek
Little Powder River
Windmill Creek
North Draw
Cedar Draw
Rawhide Creek
Coal Creek
Pasture Creek
Little Powder River
Prairie Creek
Dry Fork
Moyer Springs
SPRINGEN RANCH OIL FIELD
Garner Lake
Halsted Spring
59
Joins sheet 50, Gillette West
Joins sheet 51, Gillette East
Joins sheet 52, Fortin Draw

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

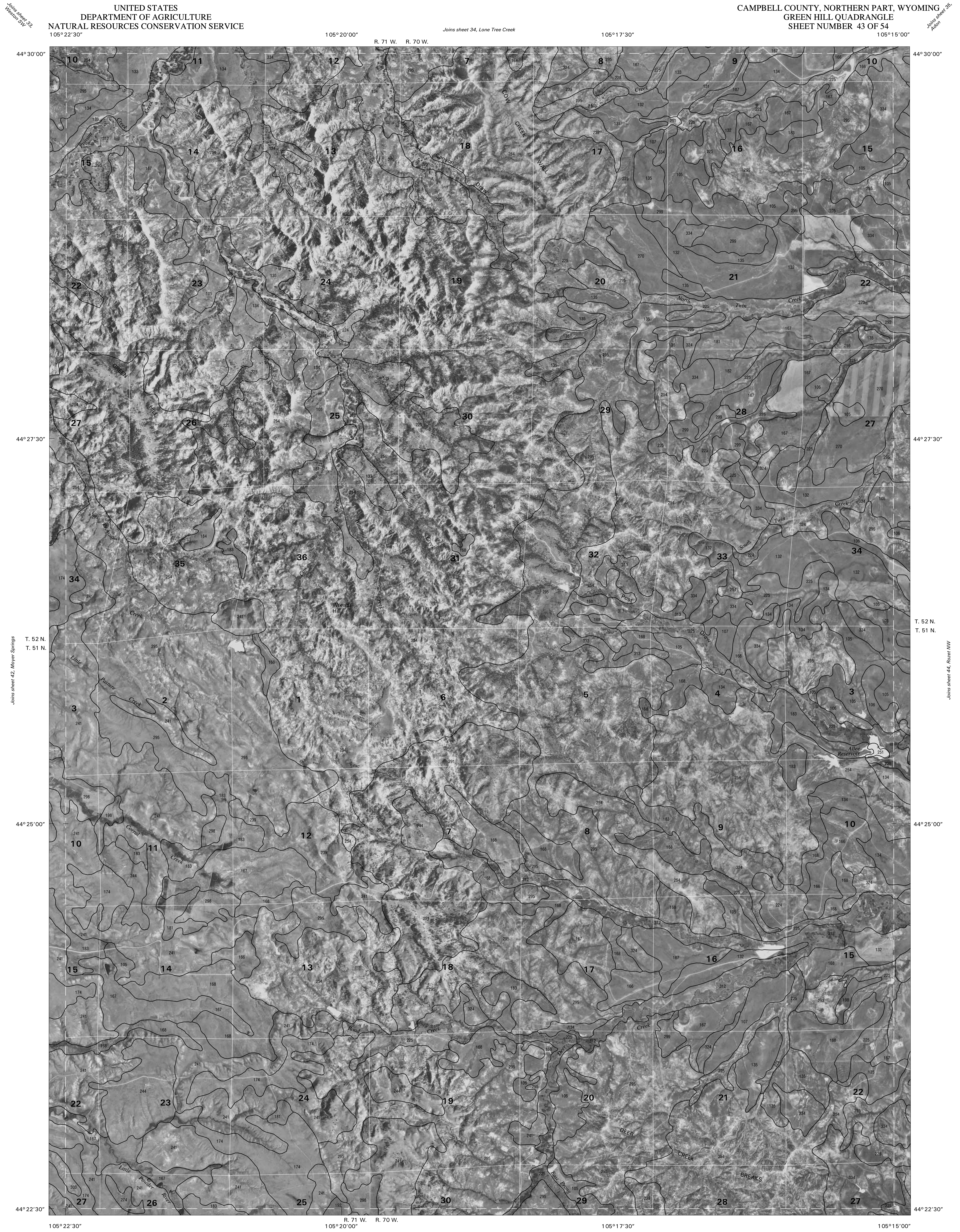

NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

MOYER SPRINGS, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 42 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

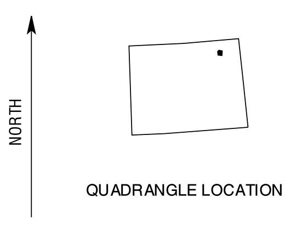
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
GREEN HILL QUADRANGLE
SHEET NUMBER 43 OF 54

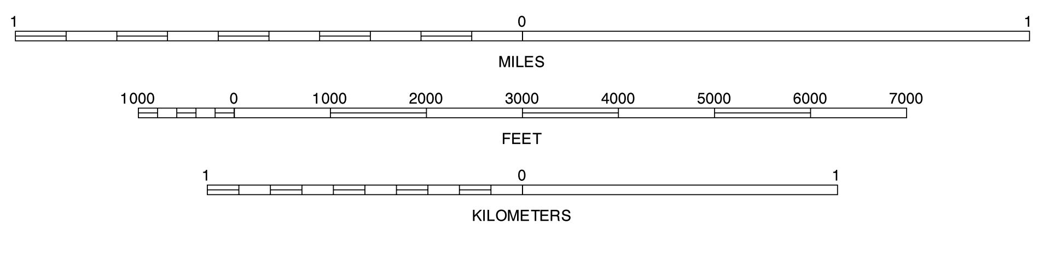

Joins sheet 33, Weston SW
Joins sheet 34, Lone Tree Creek
Joins sheet 35, Adon
Joins sheet 42, Moyer Springs
Joins sheet 44, Rozet NW
Joins sheet 51, Gillette East
Joins sheet 52, Fortin Draw
Joins sheet 53, Rozet
105° 22′30″
105° 20′00″
105° 17′30″
105° 15′00″
44° 30′00″
44° 27′30″
44° 25′00″
44° 22′30″
R. 71 W.
R. 70 W.
T. 52 N.
T. 51 N.
COW CREEK WALL
Coyote Draw
North Twin Creek
South Twin Creek
Post Draw
GREEN HILL
Wiseup Hill
Little Pasture Creek
Allen Reservoir
Corral Creek
Little Powder River
East Prong
DEER CREEK BREAKS
10
11
12
7
8
9
10
15
14
13
18
17
16
15
22
23
24
19
20
21
22
27
26
25
30
29
28
27
34
35
36
31
32
33
34
3
2
1
6
5
4
3
10
11
12
7
8
9
10
15
14
13
18
17
16
15
22
23
24
19
20
21
22
27
26
25
30
29
28
27

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

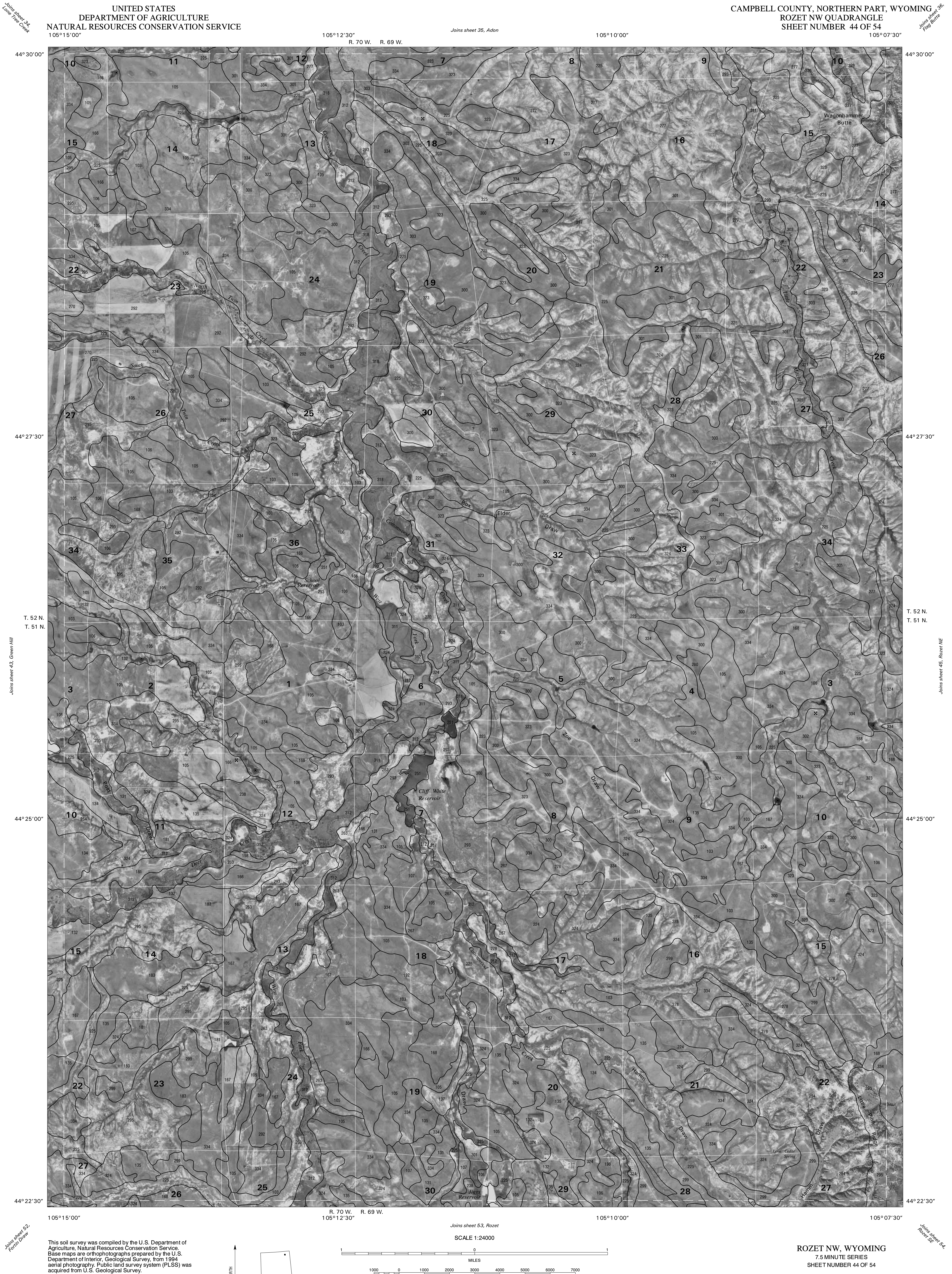
GREEN HILL, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 43 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

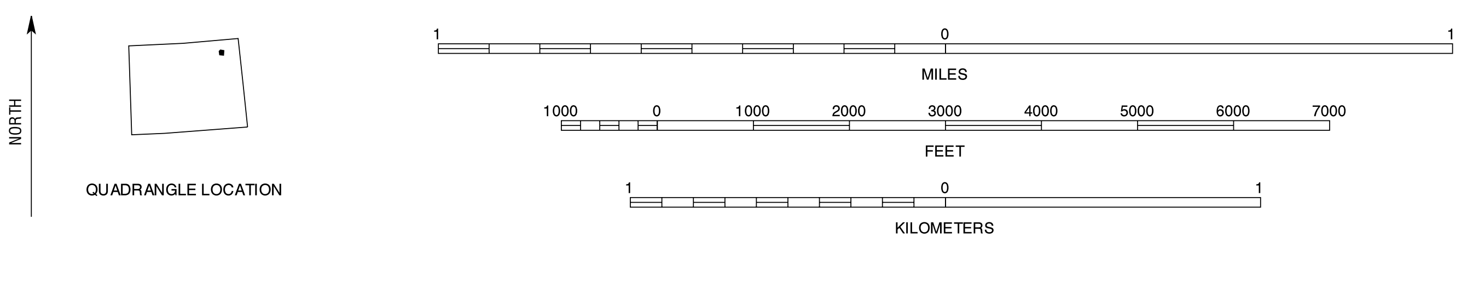
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
ROZET NW QUADRANGLE
SHEET NUMBER 44 OF 54


Joins sheet 34, Lone Tree Creek
Joins sheet 35, Adon
Joins sheet 36, Flag Butte
105°15′00″
105°12′30″
105°10′00″
105°07′30″
R. 70 W.
R. 69 W.
44°30′00″
44°27′30″
44°25′00″
44°22′30″
T. 52 N.
T. 51 N.
Joins sheet 43, Green Hill
Joins sheet 45, Rozet NE
Wagonhammer Butte
North Twin Creek
South Twin Creek
Box Elder Draw
School Reservoir
Cliff White Reservoir
Jiggs Reservoir
Lone Cedar Spring
Joins sheet 52, Fortin Draw
Joins sheet 53, Rozet
Joins sheet 54, Rozet SE

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

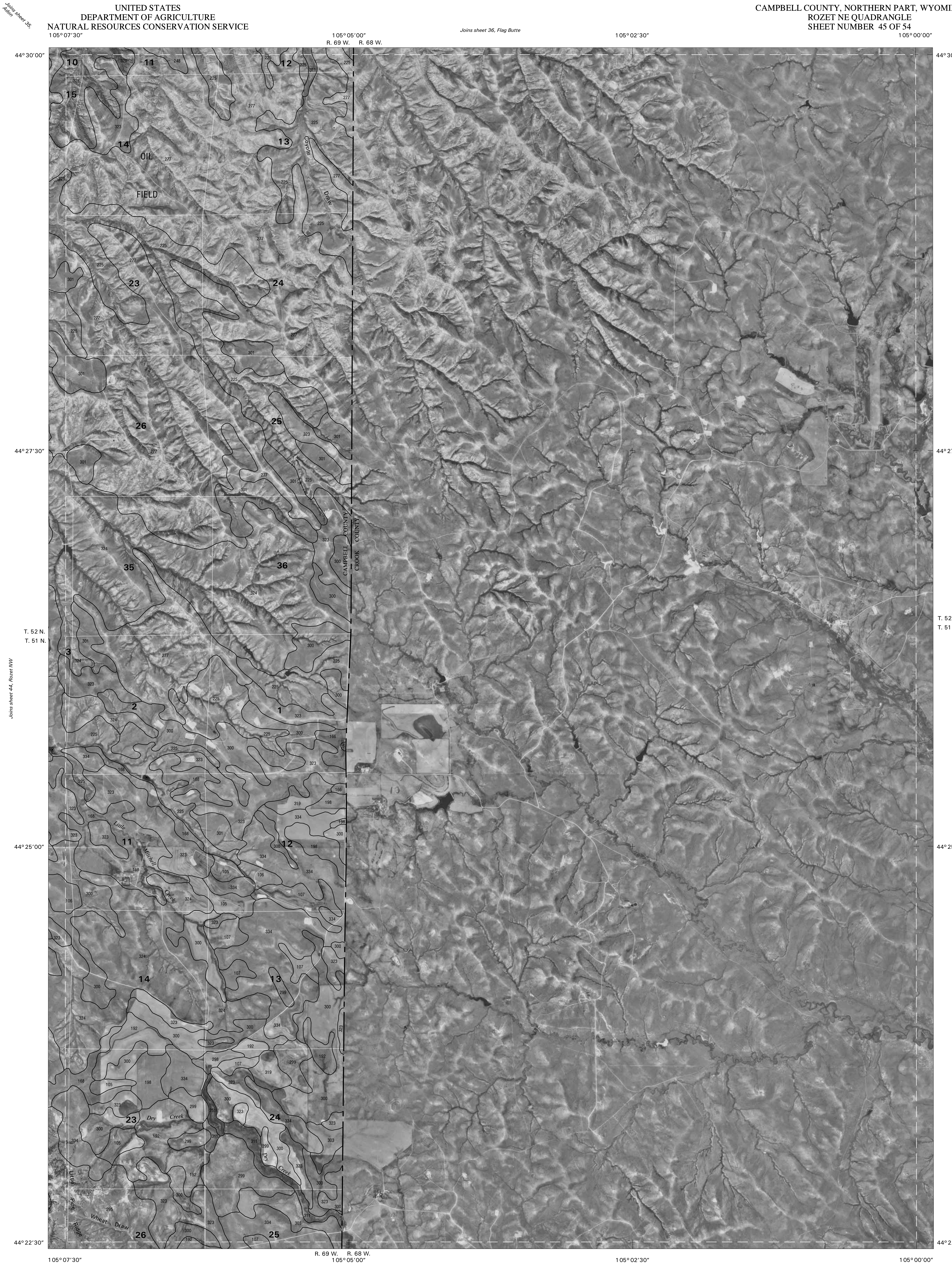
ROZET NW, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 44 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

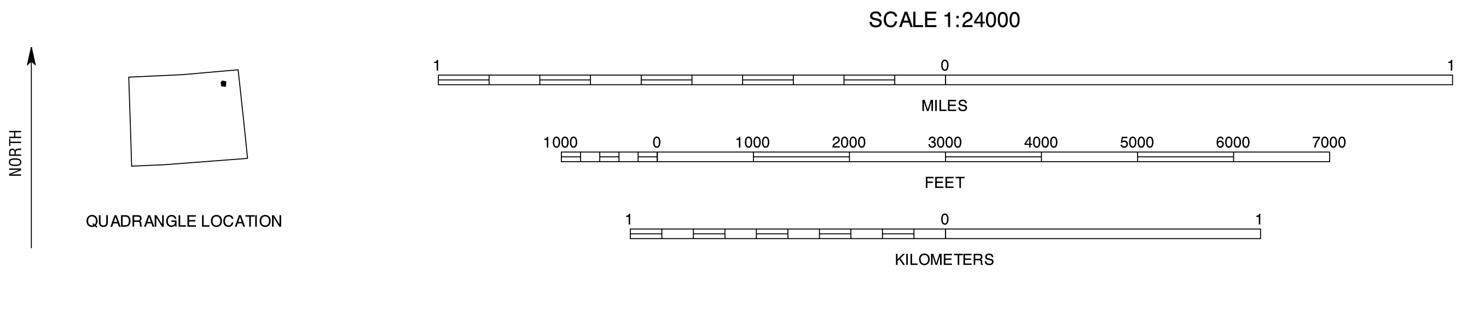
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
ROZET NE QUADRANGLE
SHEET NUMBER 45 OF 54


Joins sheet 35, Allen
Joins sheet 36, Flag Butte
Joins sheet 44, Rozet NW
Joins sheet 54, Rozet SE
Joins sheet 53, Rozet
105° 07′30″
105° 05′00″
105° 02′30″
105° 00′00″
44° 30′00″
44° 27′30″
44° 25′00″
44° 22′30″
R. 69 W.
R. 68 W.
T. 52 N.
T. 51 N.
CAMPBELL COUNTY
CROOK COUNTY
OIL
FIELD
Coyote Draw
Little Mitchell Creek
Dry Creek
Pine Ridge
Wheat Draw
10
11
12
13
14
15
23
24
25
26
35
36
3
2
1
11
12
14
13
23
24
26
25

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

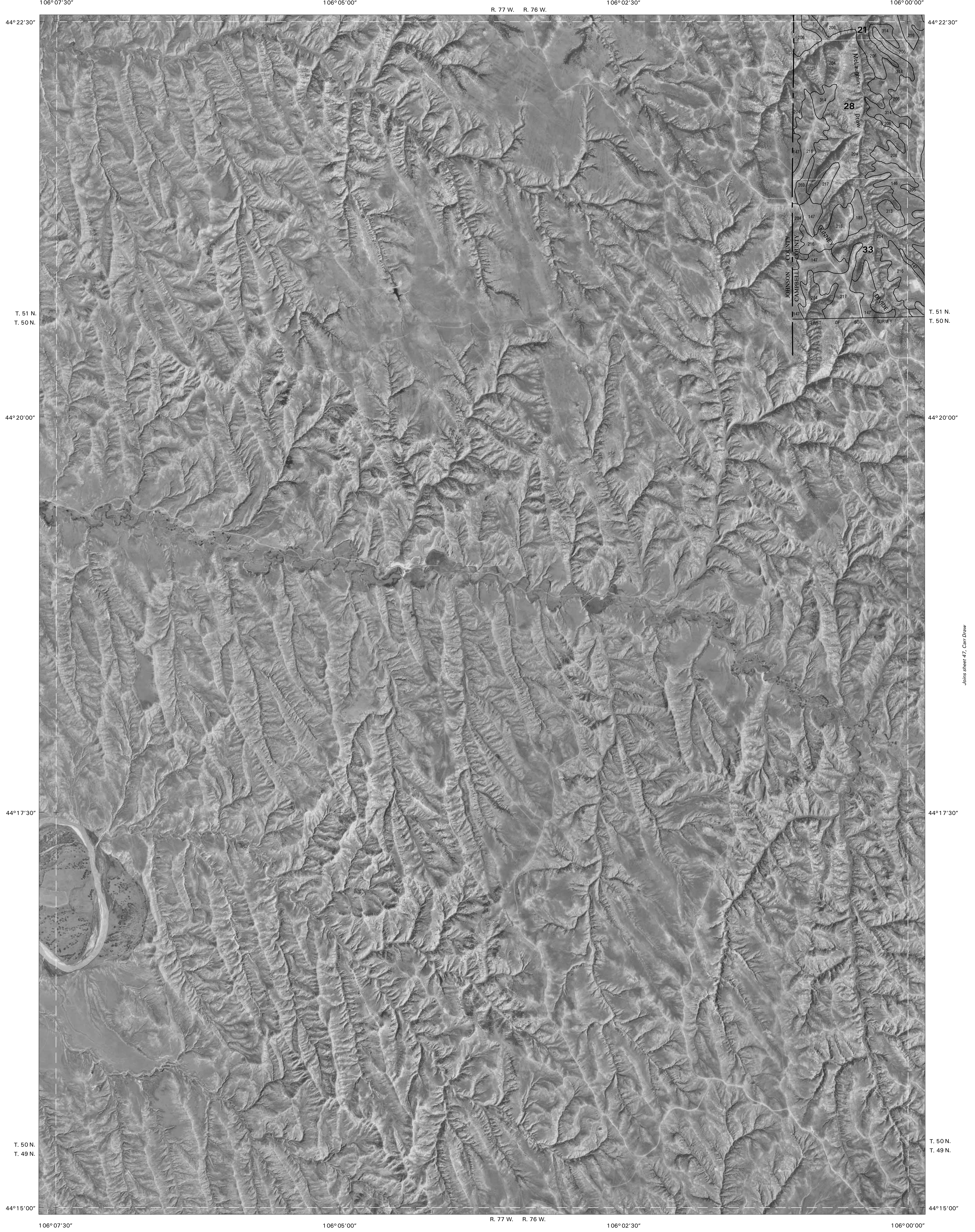

NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

ROZET NE, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 45 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

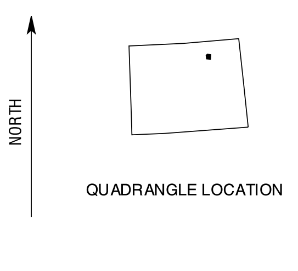
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
SOMERVILLE FLATS EAST QUADRANGLE
SHEET NUMBER 46 OF 54

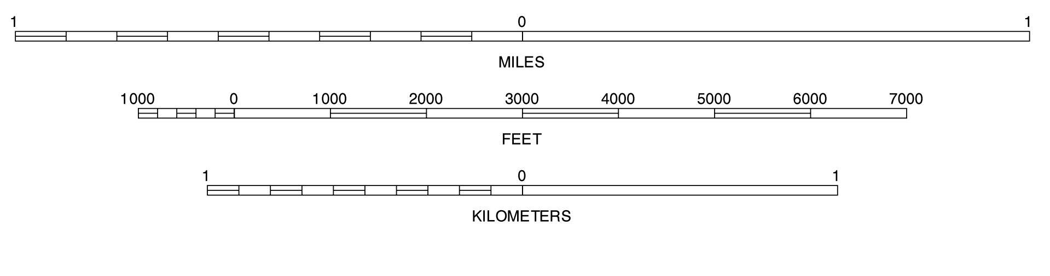

Joins sheet 37, Livingston Draw
Joins sheet 38, Echeta
Joins sheet 47, Carr Draw
106° 07′30″
106° 05′00″
106° 02′30″
106° 00′00″
44° 22′30″
44° 20′00″
44° 17′30″
44° 15′00″
R. 77 W.
R. 76 W.
T. 51 N.
T. 50 N.
T. 49 N.
21
28
33
McLaughlin Draw
KINNEY
DIVIDE
JOHNSON COUNTY
CAMPBELL COUNTY
LIMIT OF SOIL SURVEY
206
314
216
204
147
269
217
146
313
185

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

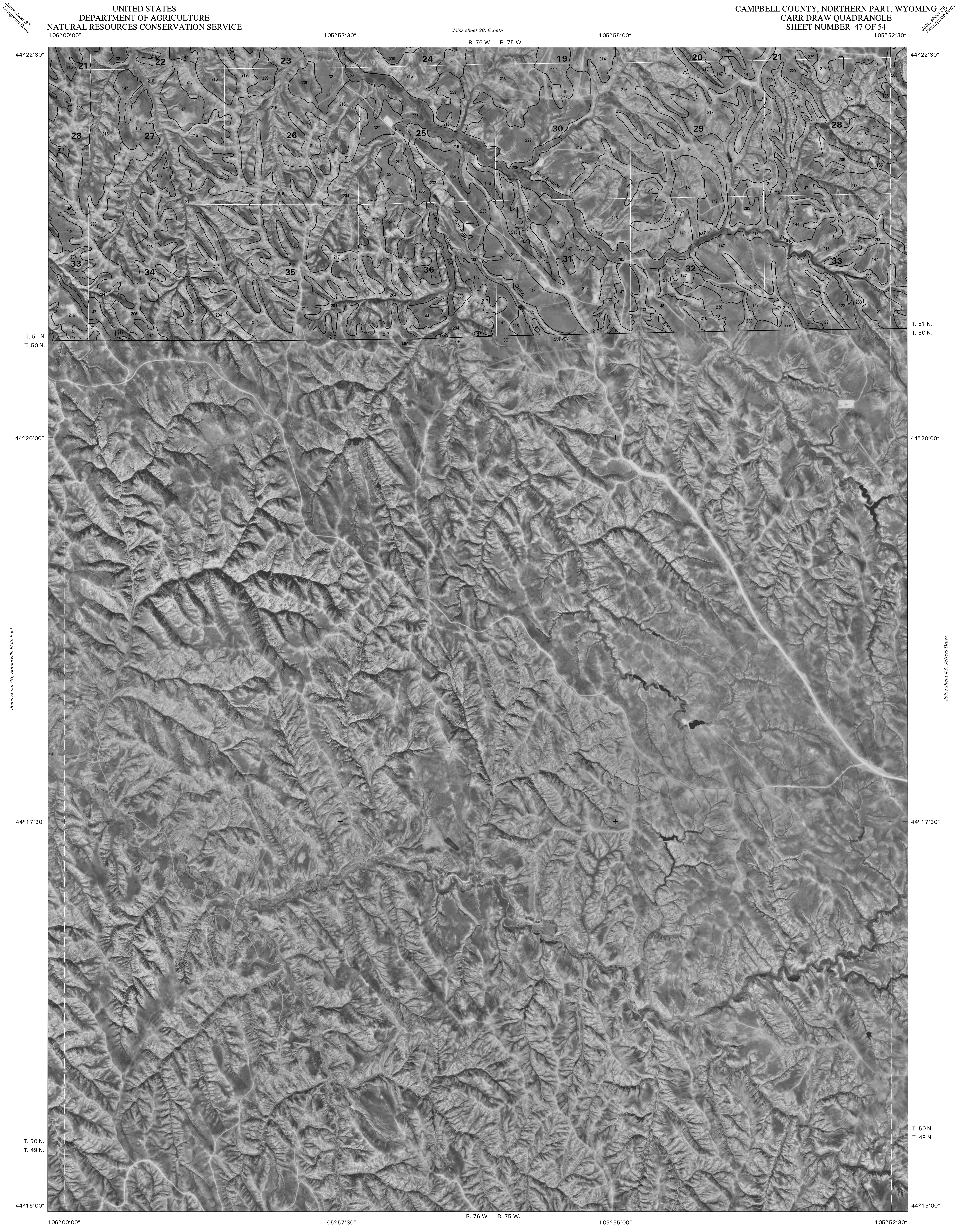
SOMERVILLE FLATS EAST, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 46 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

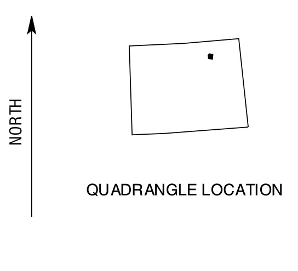
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
CARR DRAW QUADRANGLE
SHEET NUMBER 47 OF 54

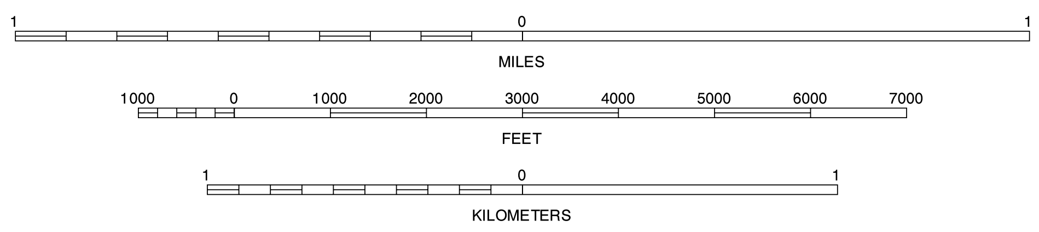

Joins sheet 37, Livingston Draw
Joins sheet 38, Echeta
Joins sheet 39, Twentymile Butte
Joins sheet 46, Somerville Flats East
Joins sheet 48, Jeffers Draw
106° 00′00″
105° 57′30″
105° 55′00″
105° 52′30″
44° 22′30″
44° 20′00″
44° 17′30″
44° 15′00″
R. 76 W.
R. 75 W.
T. 51 N.
T. 50 N.
T. 49 N.
21
22
23
24
19
20
21
28
27
26
25
30
29
28
33
34
35
36
31
32
33
Carr Draw
Antelope Draw
Amos Draw
Cottonwood Creek
SOIL SURVEY

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000

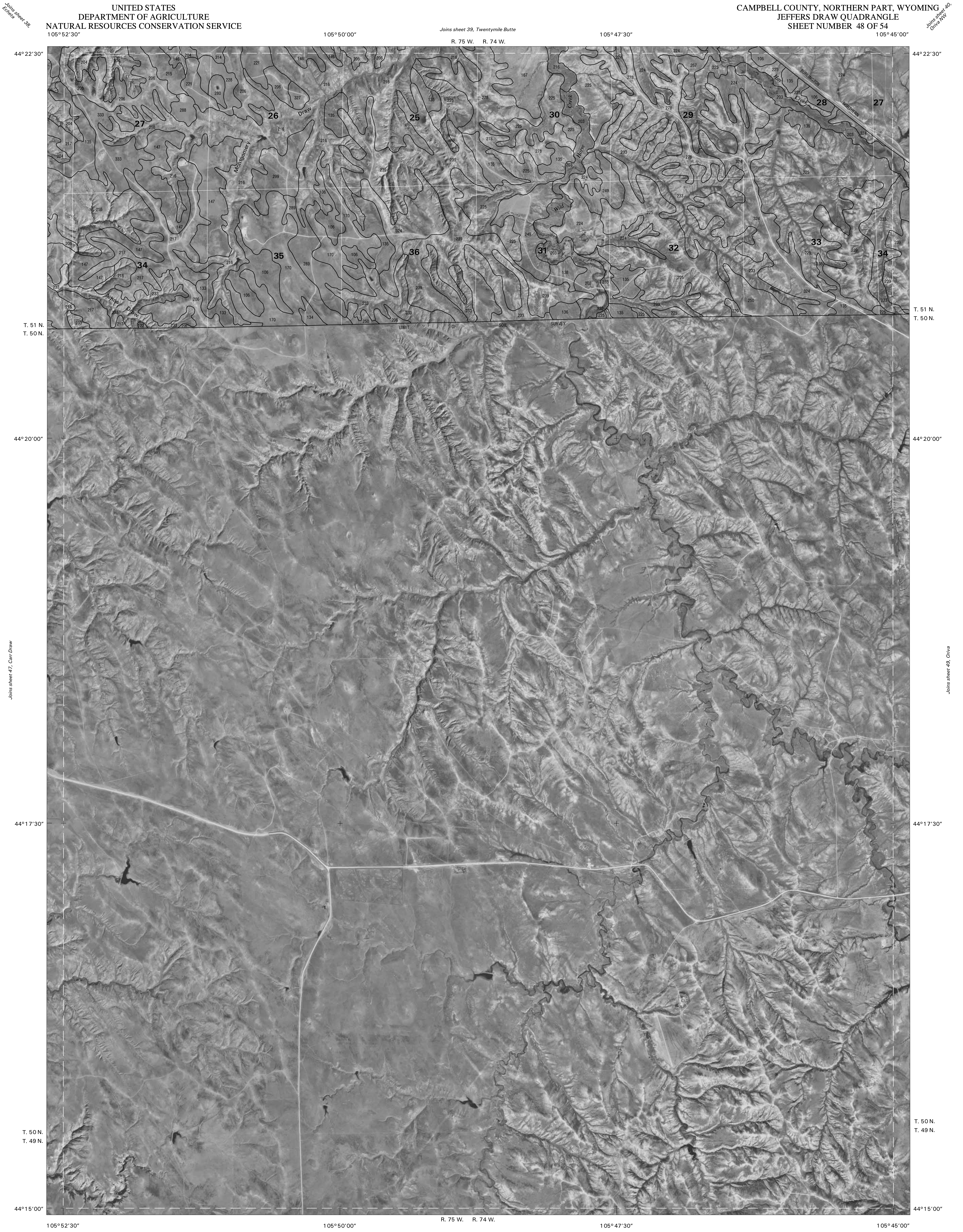

1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

CARR DRAW, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 47 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
JEFFERS DRAW QUADRANGLE
SHEET NUMBER 48 OF 54


Joins sheet 38, Echeta
Joins sheet 39, Twentymile Butte
Joins sheet 40, Oriva NW
Joins sheet 47, Carr Draw
Joins sheet 49, Oriva
105° 52′30″
105° 50′00″
105° 47′30″
105° 45′00″
44° 22′30″
44° 20′00″
44° 17′30″
44° 15′00″
R. 75 W.
R. 74 W.
T. 51 N.
T. 50 N.
T. 49 N.
LIMIT OF SOIL SURVEY
Montgomery Draw
Wild Horse Creek
Hay Creek
BURLINGTON NORTHERN
27
26
25
30
29
28
34
35
36
31
32
33

SCALE 1:24000

1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS
NORTH
QUADRANGLE LOCATION

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

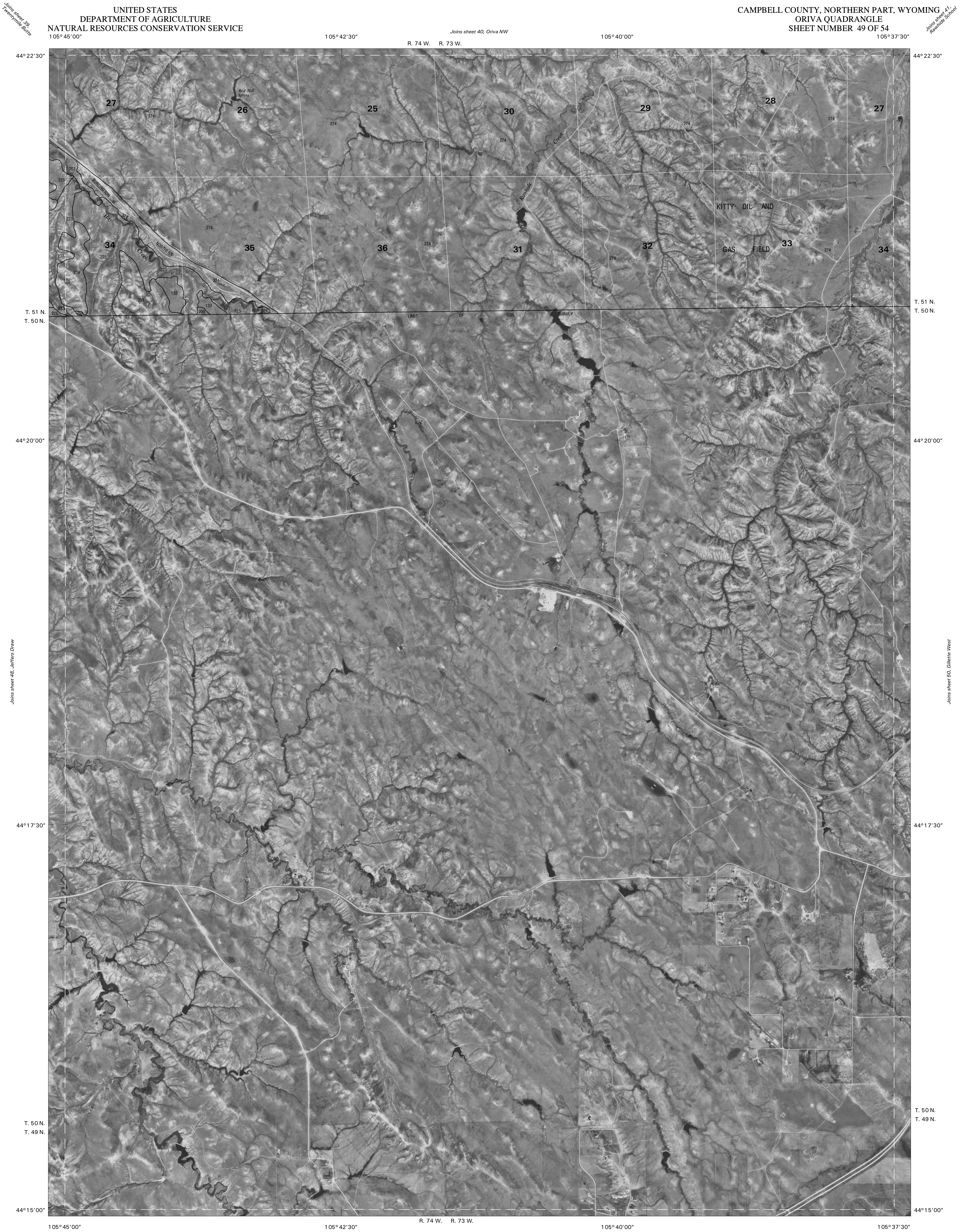
JEFFERS DRAW, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 48 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

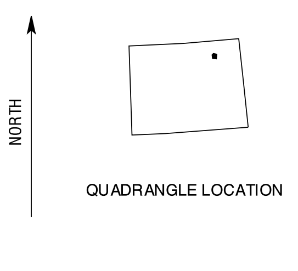
CAMPBELL COUNTY, NORTHERN PART, WYOMING
ORIVA QUADRANGLE
SHEET NUMBER 49 OF 54



Joins sheet 39, Twentymile Butte
Joins sheet 40, Oriva NW
Joins sheet 41, Rawhide School
Joins sheet 48, Jeffers Draw
Joins sheet 50, Gillette West
105° 45′00″
105° 42′30″
105° 40′00″
105° 37′30″
44° 22′30″
44° 20′00″
44° 17′30″
44° 15′00″
R. 74 W.
R. 73 W.
T. 51 N.
T. 50 N.
T. 49 N.
27
26
25
30
29
28
34
35
36
31
32
33
Red Hill Spring
Rawhide Creek
Hay Creek
BURLINGTON NORTHERN
KITTY OIL AND GAS FIELD
LIMIT OF SOIL SURVEY
274
133
223
225

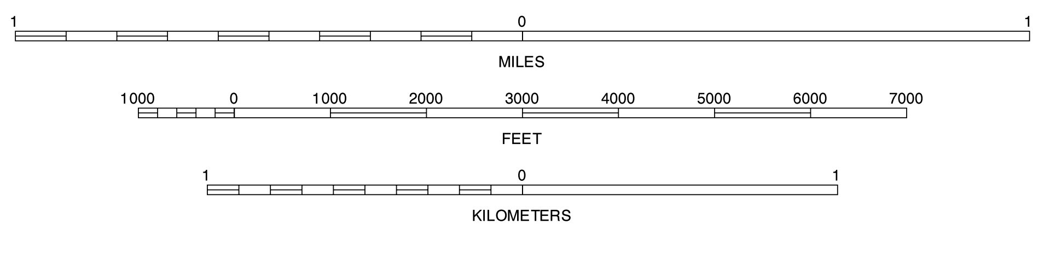
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000



1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

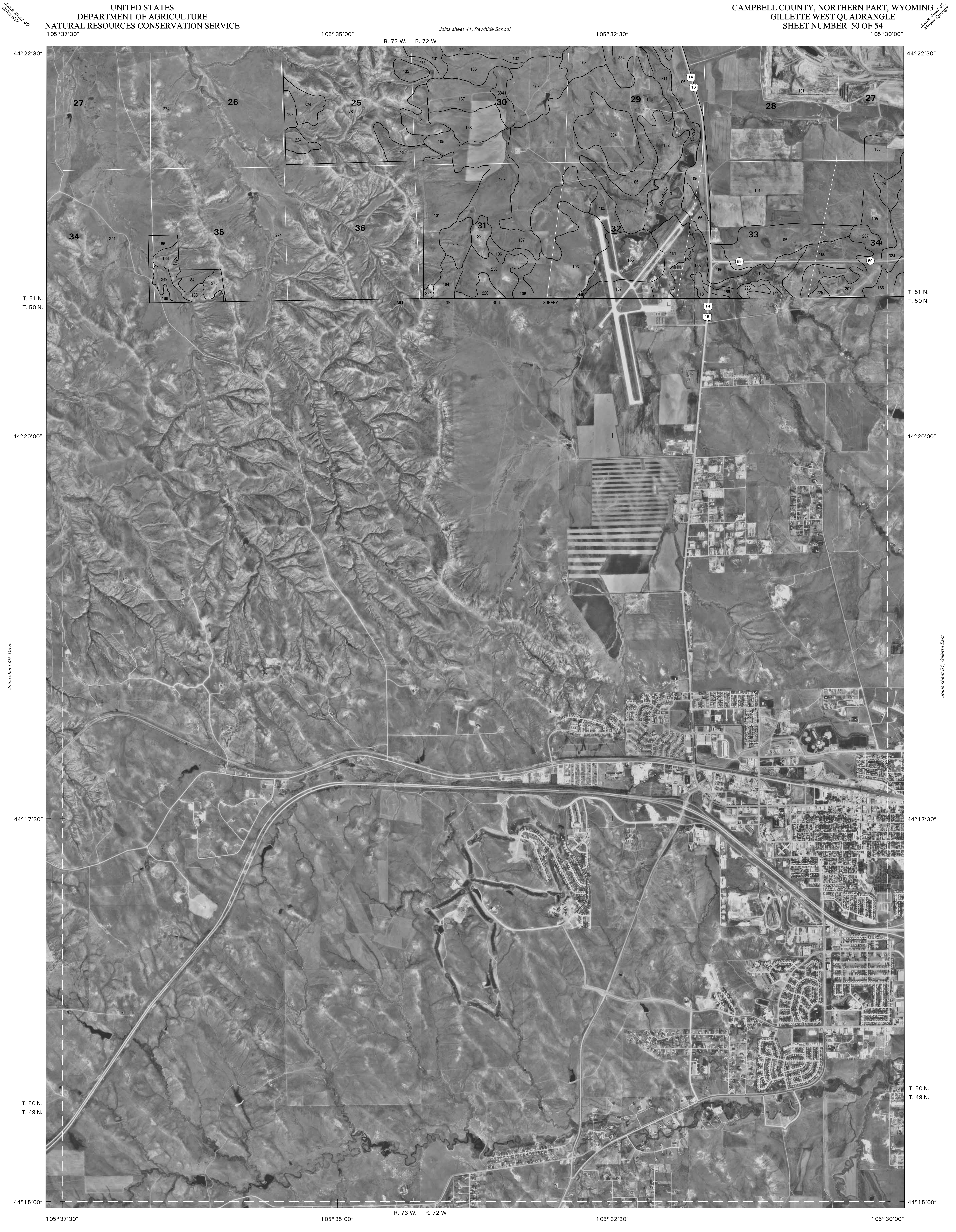
ORIVA, WYOMING

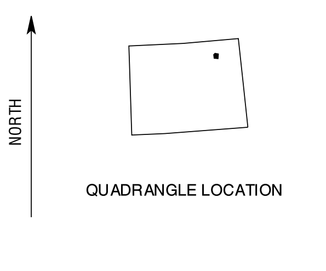
7.5 MINUTE SERIES
SHEET NUMBER 49 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
GILLETTE WEST QUADRANGLE
SHEET NUMBER 50 OF 54


Joins sheet 40, Oriva NW
Joins sheet 41, Rawhide School
Joins sheet 42, Moyer Springs
Joins sheet 49, Oriva
Joins sheet 51, Gillette East
105° 37′30″
105° 35′00″
105° 32′30″
105° 30′00″
44° 22′30″
44° 20′00″
44° 17′30″
44° 15′00″
R. 73 W.
R. 72 W.
T. 51 N.
T. 50 N.
T. 49 N.
27
26
25
30
29
28
27
34
35
36
31
32
33
34
LIMIT OF SOIL SURVEY
Rawhide Creek
Little Rawhide Creek
14
16
59
132
131
278
135
166
167
334
103
311
105
191
324
224
168
183
274
131
295
238
106
137
181
186
220
184
249
138
166
223
153
207
225
224
103
1000
250


NORTH
QUADRANGLE LOCATION

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

GILLETTE WEST, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 50 OF 54

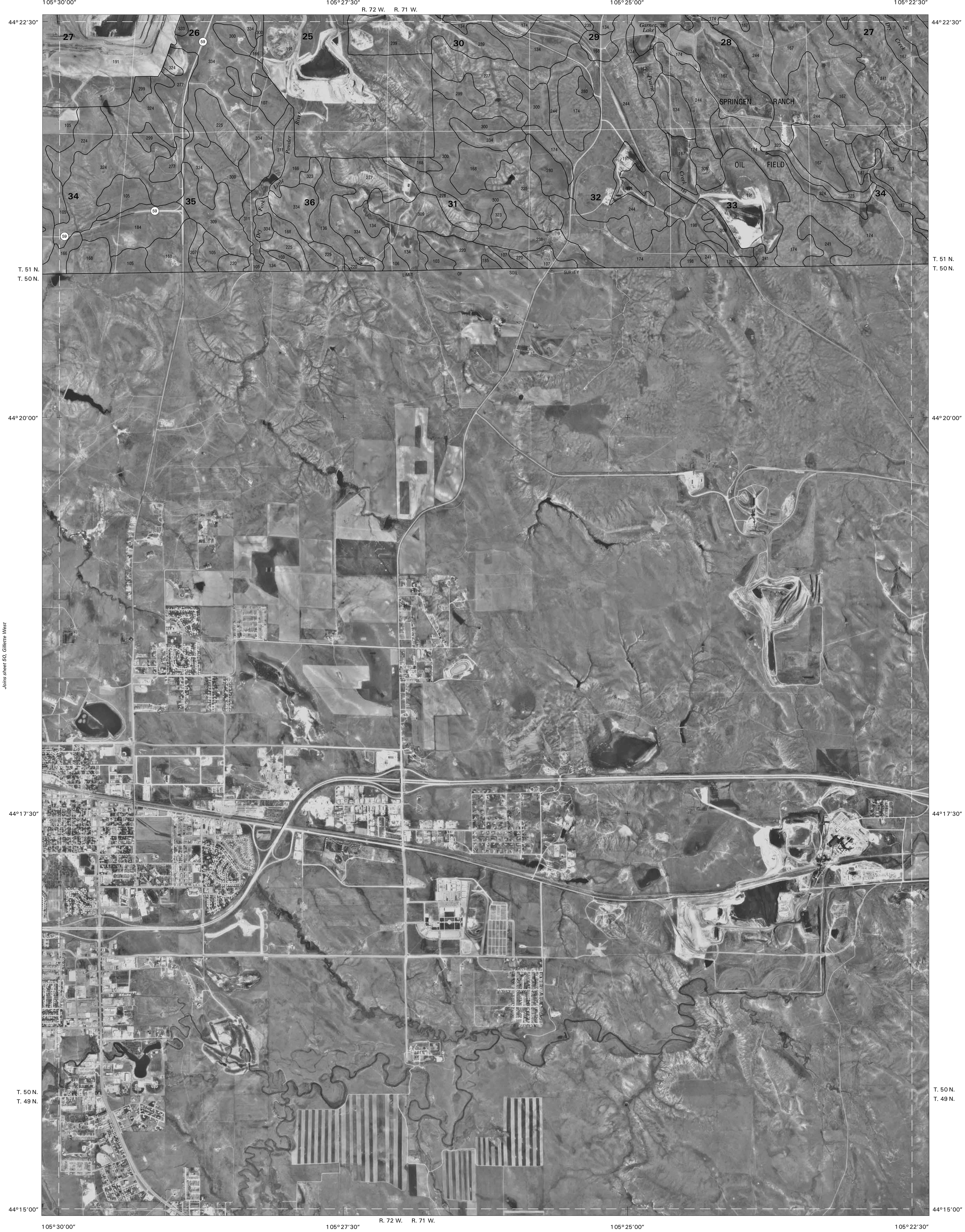
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 41, Rawhide School

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

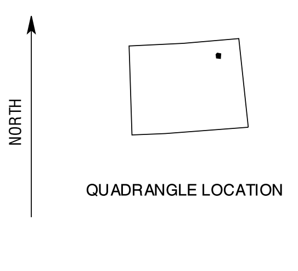
CAMPBELL COUNTY, NORTHERN PART, WYOMING
GILLETTE EAST QUADRANGLE
SHEET NUMBER 51 OF 54

Joins sheet 43, Green Hill

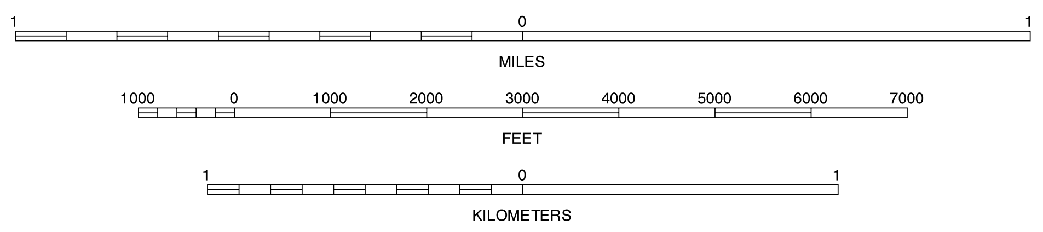

Joins sheet 42, Moyer Springs
105° 30′00″
105° 27′30″
105° 25′00″
105° 22′30″
R. 72 W.
R. 71 W.
44° 22′30″
44° 20′00″
44° 17′30″
44° 15′00″
T. 51 N.
T. 50 N.
T. 49 N.
Joins sheet 50, Gillette West
Joins sheet 52, Fortin Draw
27
26
25
30
29
28
27
34
35
36
31
32
33
34
59
Garner Lake
Prairie Creek
Dry Creek
Dry Fork Little Powder River
SPRINGEN RANCH
OIL FIELD
LIMIT OF SOIL SURVEY
191
333
334
300
166
239
134
174
280
168
167
244
241
324
277
299
105
224
228
107
323
309
184
136
225
220
211
198

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

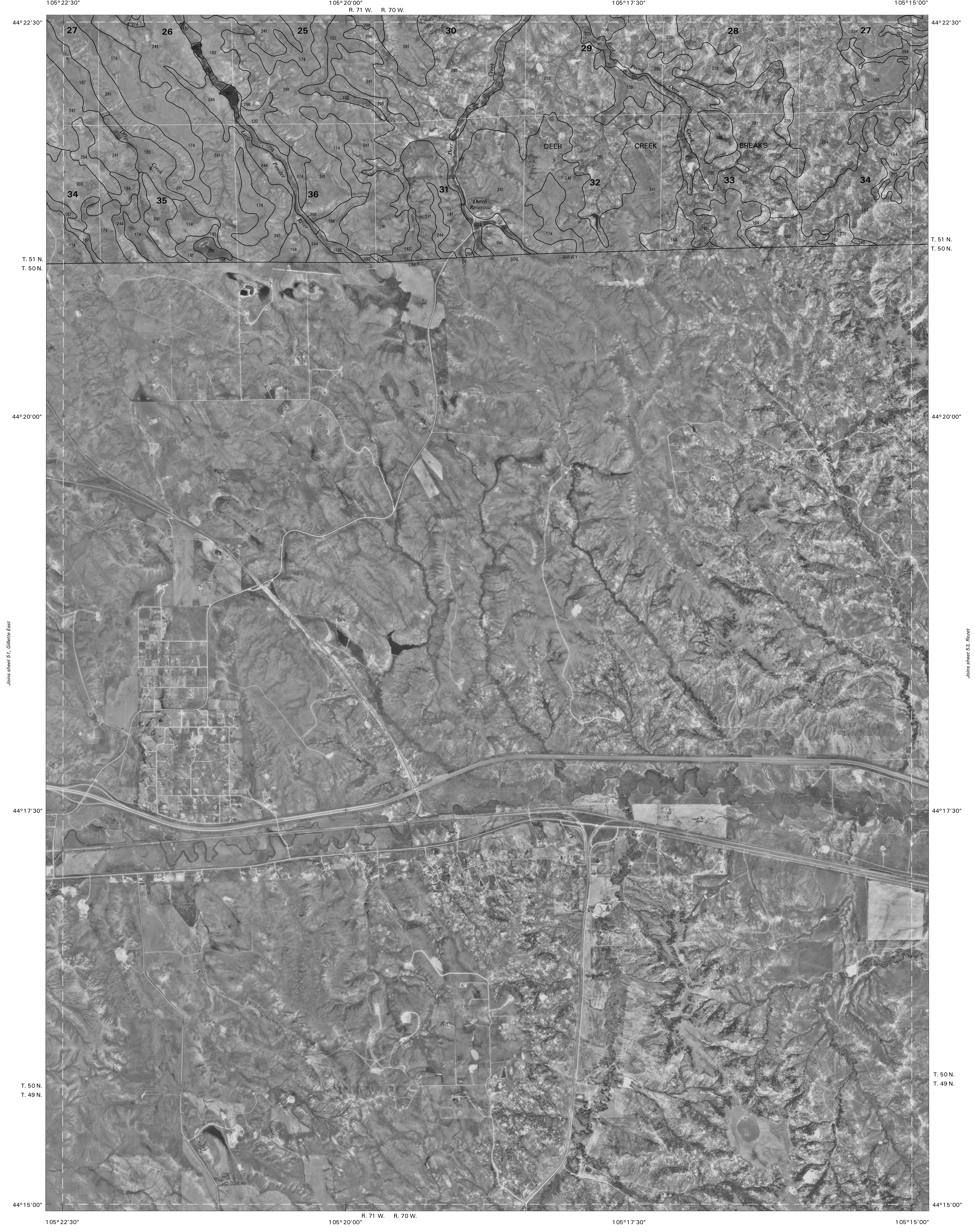
GILLETTE EAST, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 51 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

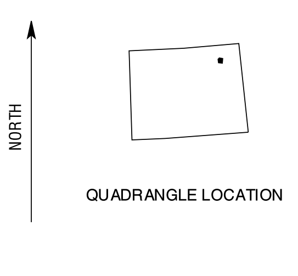
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
FORTIN DRAW QUADRANGLE
SHEET NUMBER 52 OF 54

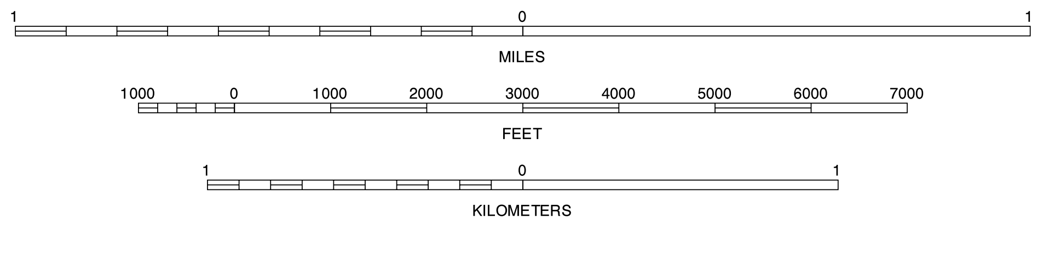

Joins sheet 42, Moyer Springs
Joins sheet 43, Green Hill
Joins sheet 44, Rozet NW
Joins sheet 51, Gillette East
Joins sheet 53, Rozet
105° 22′30″
105° 20′00″
105° 17′30″
105° 15′00″
44° 22′30″
44° 20′00″
44° 17′30″
44° 15′00″
R. 71 W.
R. 70 W.
T. 51 N.
T. 50 N.
T. 49 N.
27
26
25
30
29
28
34
35
36
31
32
33
DEER
CREEK
BREAKS
Dry Creek
Little Powder River
Deer Creek
Little Prong Deer Creek
Ditch Reservoir
LIMIT OF SOIL SURVEY

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000

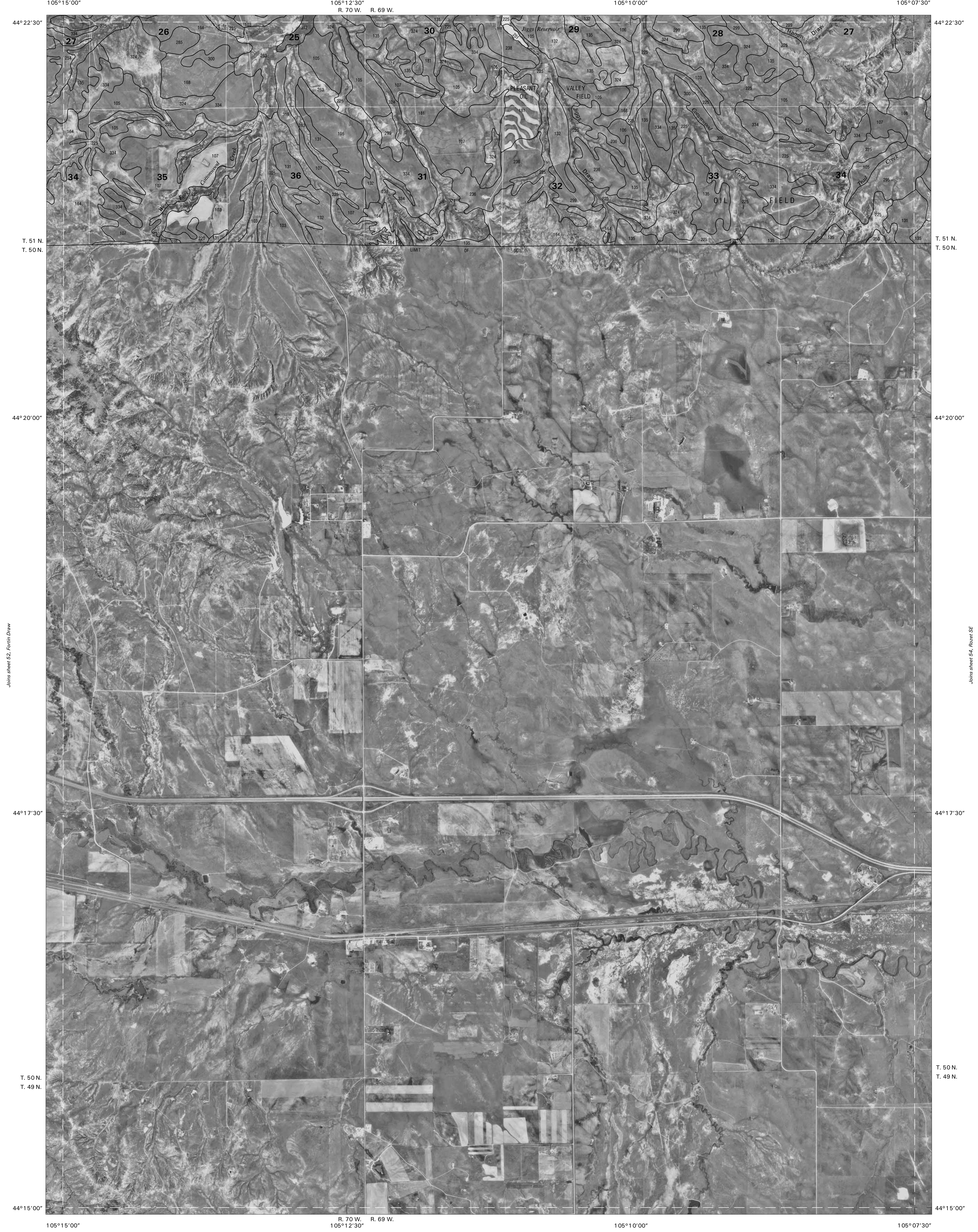

1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

FORTIN DRAW, WYOMING
7.5 MINUTE SERIES
SHEET NUMBER 52 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

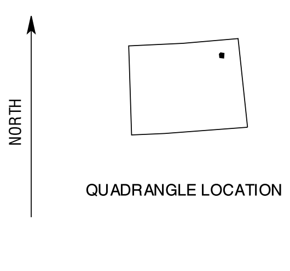
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
ROZET QUADRANGLE
SHEET NUMBER 53 OF 54

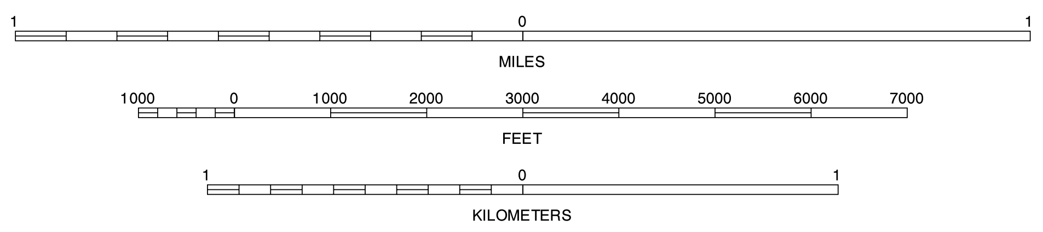

Joins sheet 43, Green Hill
Joins sheet 44, Rozet NW
Joins sheet 45, Rozet NE
Joins sheet 52, Fortin Draw
Joins sheet 54, Rozet SE
105°15′00″
105°12′30″
105°10′00″
105°07′30″
44°22′30″
44°20′00″
44°17′30″
44°15′00″
R. 70 W.
R. 69 W.
T. 51 N.
T. 50 N.
T. 49 N.
27
26
25
30
29
28
27
34
35
36
31
32
33
34
Jiggs Reservoir
PLEASANT VALLEY OIL FIELD
Jiggs Draw
Cottonwood Creek
West Fork Cottonwood Creek
Hamm Draw
Trail Creek
OIL FIELD
LIMIT OF SOIL SURVEY

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION

SCALE 1:24000


1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

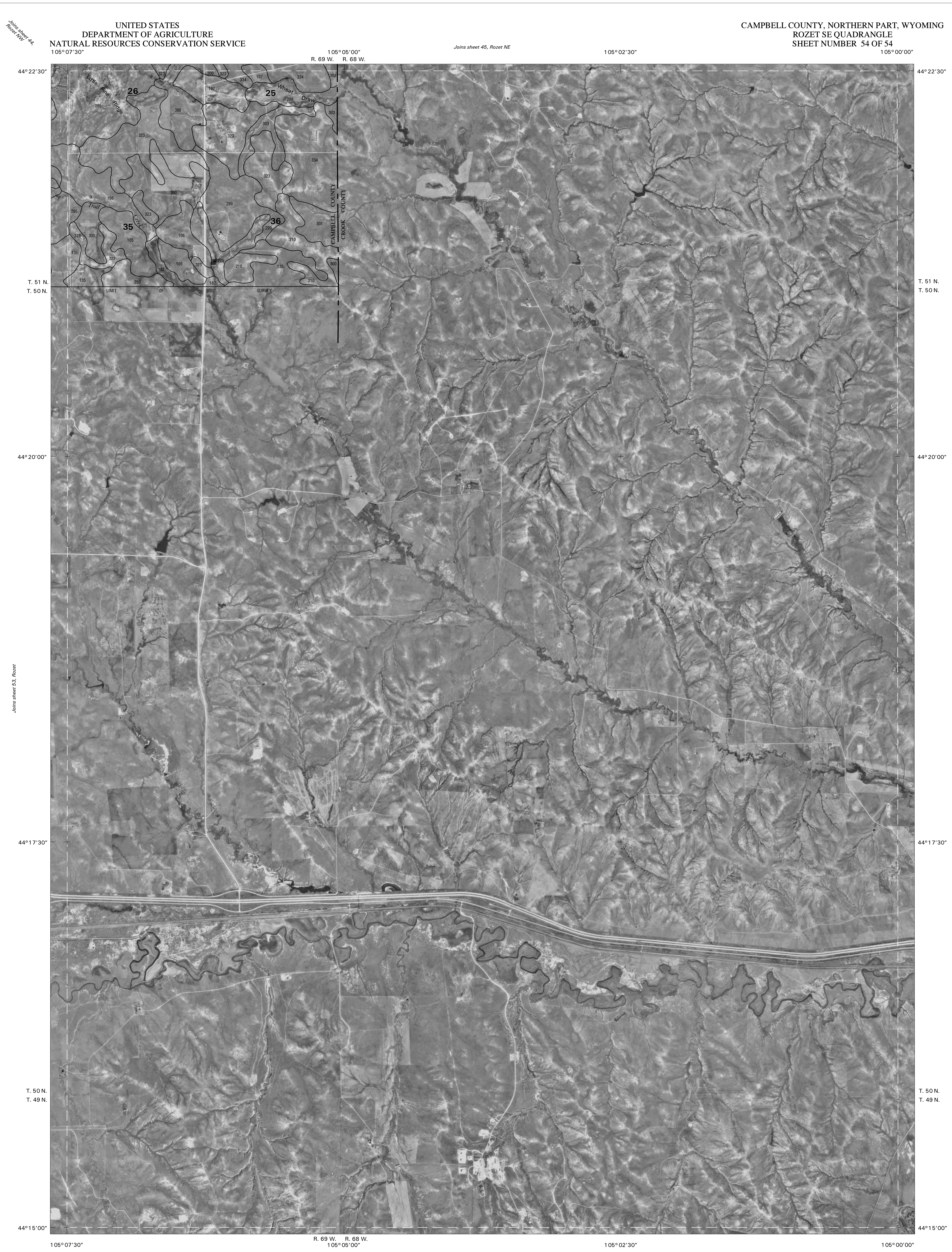
ROZET, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 53 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

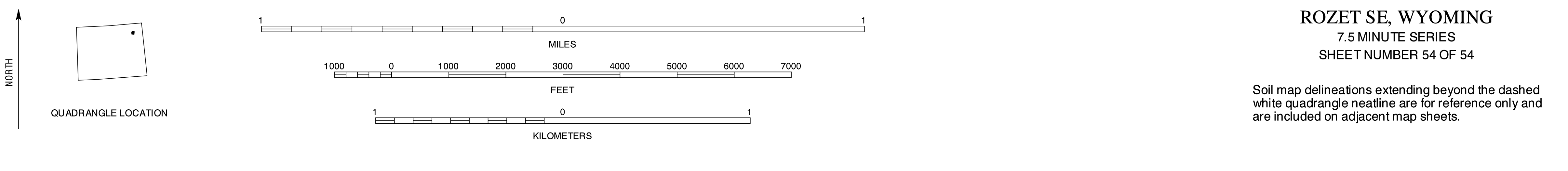
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CAMPBELL COUNTY, NORTHERN PART, WYOMING
ROZET SE QUADRANGLE
SHEET NUMBER 54 OF 54


Joins sheet 44, Rozet NW
Joins sheet 45, Rozet NE
Joins sheet 53, Rozet
105° 07′30″
105° 05′00″
105° 02′30″
105° 00′00″
R. 69 W.
R. 68 W.
44° 22′30″
44° 20′00″
44° 17′30″
44° 15′00″
T. 51 N.
T. 50 N.
T. 49 N.
26
25
35
36
Little Pine Ridge
Wheat Draw
Trail Creek
CAMPBELL COUNTY
CROOK COUNTY
LIMIT OF SOIL SURVEY
323
300
334
107
303
192
298
295
166
299
301
210
135
131
105
106
182
225
250

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994 aerial photography. Public land survey system (PLSS) was acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 13. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


NORTH
QUADRANGLE LOCATION
SCALE 1:24000
1
0
1
MILES
1000
0
1000
2000
3000
4000
5000
6000
7000
FEET
1
0
1
KILOMETERS

ROZET SE, WYOMING

7.5 MINUTE SERIES
SHEET NUMBER 54 OF 54

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.